



# Compliance

# and Checklist Resources

# Pollution Prevention

# Guidebook

# for

# Indiana

# Printers



## Acknowledgments

The Indiana Department of Environmental Management wishes to acknowledge the following individuals who contributed to the development of this compliance guidebook.

### Printers Review Committee:

Eva Aloia – Printing Industry of Illinois/Indiana Association  
Jeff Bowe – The Resource Development Group, Indianapolis  
Tim Coquillard – Lithotone, Inc., Elkhart  
Paul Frodge – Printing Industry of Illinois/Indiana Association  
Tracy Guffey – Print Communications, Inc., Indianapolis  
Jack Keller – Design Printing, Inc., Indianapolis  
Cindy Madrick – Cornerstone Environmental, Health, & Safety, Inc., Indianapolis  
Charles McLaughlin – Ball State University, Muncie  
Sam Pentzer – Pentzer Printing, Columbus  
Dave Wintz – IDEM, Compliance and Technical Assistance Program

The Printers Review Committee met several times during 1999 and 2000. We met to discuss format, readability and other issues related to this document. Members of this committee took time out of their regular work duties and spent countless hours performing this important review task. This guidebook would not exist without the hard work of the review committee.

### State Agency reviewers:

Dave Berry – IDEM, Office of Land Quality  
Bill Blue – IDEM, Office of Water Quality  
Ian Ewusi-Wilson – Indiana State Emergency Management Agency (SEMA)  
Jerry Hebert – Indiana Department of Labor, Bureau of Safety Education and Training  
Polly Hite – IDEM, Office of Air Quality  
Skip Powers – IDEM, Office of Land Quality  
Trip Sinha – IDEM, Office of Air Quality  
Mara J. Snyder – Indiana Department of Fire and Building Services, Office of the State Fire Marshal  
Cheri Storms – IDEM, Compliance and Technical Assistance Program

## THE INDIANA COMPLIANCE GUIDEBOOK

Michelle Weddle – IDEM, Office of Land Quality

Doug Wagner – IDEM, Office of Air Quality

The paper for the guidebook is courtesy of Lithotone, Inc., Elkhart.

The printing of the guidebook is courtesy of Craftline Printing, Fort Wayne.

The printing of the cover is courtesy of Disc Graphics, Indianapolis.

The binders are courtesy of Perfect Binding, Inc., Indianapolis.

Guidebook Contractor: Robert A. Fricke of ESMillennium, LC., Braintree, Massachusetts.

This guidebook was funded in part by a grant from the Indiana Department of Environmental Management.

This guidebook is printed on 80 pound, Plainfield Opaque from Domtar Papers. The paper is elemental chlorine free, acid free and contains 20% post-consumer waste.

### Disclaimer

This manual, Compliance and Pollution Prevention Guidebook for Indiana Printers, is published by the Indiana Department of Environmental Management (IDEM) and Printing Industry of Illinois/Indiana Association, Inc. (PII). Every effort has been made to ensure the accuracy and completeness of the manual. However, the publishers, authors and reviewers can make no guarantee that the manual is completely free of errors or omissions. This manual is intended solely as general guidance. It is ultimately the responsibility of the facility to ensure that it complies with all applicable regulations. Owners, operators, and other responsible parties at the facility may wish to seek advice about the circumstances of their facility from independent environmental professionals before making compliance decisions. The publisher, authors, and reviewers make no warranties or representations, expressed or implied, that the use of any information, apparatus, method, or process discussed in this document will not infringe on privately owned rights. The publisher, authors, and reviewers assume no liability for damages resulting from the use of any information, apparatus, method, or process disclosed in this document. The use of any name of a specific brand of products in this manual is intended only as an example and is not an endorsement of that brand by IDEM and/or PII and should not be construed as such.

### Liability Limitations

The information compiled in this manual is being provided by IDEM and PII as a service to Indiana printers. Although every effort has been made to ensure the accuracy and completeness of this information, the publisher, authors, and reviewers of this publication cannot be held liable for any errors, omissions, or interpretations of regulations described herein. The rules and interpretation may change without individual notice to printers.

# Table of Contents

## Getting Started

- 1 TAKING THE ROAD TO ENVIRONMENTAL QUALITY
- 2 WHAT YOU SHOULD BE DOING NOW
- 3 KEY ENVIRONMENTAL CONCEPTS
- 4 THE ROAD MAP TO ENVIRONMENTAL EXCELLENCE

## Air Quality (cont.)

- 18 OTHER AIR QUALITY ISSUES
- 18 DO I HAVE TO REPORT MY EMISSIONS?
- 19 WHAT ABOUT THE MACT STANDARDS
- 19 DO I NEED A RISK MANAGEMENT PLAN??

## Air Quality

- 6 BASIC STEPS
- 7 WHAT POLLUTANTS ARE EMITTED  
IMPORTANT DEFINITIONS
- 7 HOW DO I GET STARTED AND WHERE DO I GO FROM HERE?
- 9 HOW DO I DETERMINE MY POTENTIAL VOC EMISSIONS
- 12 DO I HAVE TO REGISTER MY SHOP WITH IDEM?
- 12 WHAT IF I AM EXEMPT FROM REGISTRATION?
- 13 DOES MY SHOP NEED AN OPERATING PERMIT FOR VOC EMISSIONS?
- 14 WHAT IF MY SHOP IS LOCATED IN A NONATTAINMENT COUNTY?
- 15 I HAVE POLLUTION CONTROL EQUIPMENT.
- 15 WHAT ABOUT OTHER POLLUTANT EMISSIONS?
- 16 WHAT IS A PART 70 OPERATING PERMIT?
- 17 WHAT ABOUT HAZARDOUS AIR POLLUTANTS?
- 18 SSOA FOR GRAPHIC ARTS OPERATIONS

## Land Quality

- 21 HAZARDOUS WASTES
- 21 IMPORTANT DEFINITIONS
- 22 HOW DO I KNOW A WASTE IS HAZARDOUS?
- 23 WHAT ARE THE GENERAL HAZARDOUS WASTE MANAGEMENT REQUIREMENTS?
- 23 HOW DO I DETERMINE MY GENERATOR STATUS?
- 24 DO I NEED AN EPA ID NUMBER?
- 25 SATELLITE ACCUMULATION OF HAZARDOUS WASTE
- 26 HAZARDOUS WASTE STORAGE AREA
- 26 HOW MUST I LABEL MY HAZARDOUS WASTE?
- 27 HOW DO I HANDLE MY USED SHOP TOWELS?
- 28 HOW DO I SHIP MY HAZARDOUS WASTE?
- 29 WHAT IF I RECYCLE HAZARDOUS WASTE?
- 29 EMERGENCY RESPONSE & TRAINING FOR CESQGS
- 30 EMERGENCY RESPONSE & TRAINING FOR SQGS
- 31 EMERGENCY RESPONSE & TRAINING FOR LQGS
- 31 DO I NEED TO FILE A USEPA HAZARDOUS WASTE REPORT?
- 32 SUMMARY OF GENERATOR REQUIREMENTS
- 34 USED OIL
- 34 WHAT IS USED OIL?
- 34 IMPORTANT DEFINITIONS
- 35 SOURCES OF USED OIL
- 35 MIXING USED OIL WITH HAZARDOUS WASTE
- 35 WHAT ABOUT OILY WASTEWATER?
- 36 HOW DO I MANAGE USED OIL IN MY SHOP?
- 37 HOW DO I HANDLE OILY DEBRIS?

## Land Quality (cont.)

- 37 HOW DO I DISPOSE OF MY USED OIL AND OILY DEBRIS?
- 37 CAN I BURN USED OIL IN MY SPACE HEATER?
- 38 HOW SHOULD I MANAGE USED OIL FILTERS?
- 39 UNIVERSAL WASTES
  - 39 WHAT ARE UNIVERSAL WASTES?
  - 40 UNIVERSAL WASTE EXEMPTION
  - 40 SUMMARY OF UNIVERSAL WASTE MANAGEMENT REQUIREMENTS FOR GENERATORS
  - 41 HOW DO I HANDLE LARGE LEAD-ACID BATTERIES?
  - 41 HOW ARE UNIVERSAL WASTES TRANSPORTED?
  - 42 HOW DO I HANDLE AN ENVIRONMENTAL RELEASE OF UNIVERSAL WASTES?
- 43 DISCARDED ELECTRONICS
  - 44 FIRST TRY REUSE!
  - 44 THEN TRY RECYCLING
  - 45 HOW TO DISPOSE

## Water Quality (cont.)

- 54 HOW DO I GET A STORMWATER PERMIT?
- 54 STORMWATER POLLUTION PREVENTION PLAN
- 55 WHAT IF I AM EXEMPT FROM A STORMWATER PERMIT?

## Workplace Safety

- 56 WORKPLACE SAFETY
- 57 HOW DO I DEVELOP A SAFETY & HEALTH PROGRAM?
- 58 THE TEN MOST COMMON OSHA VIOLATIONS FOUND IN A PRINT SHOP

## Water Quality

- 46 CITY AND TOWN SEWERS
- 46 WHAT ARE TYPICAL DISCHARGE LIMITS?
- 47 HOW DO I GET A WASTEWATER DISCHARGE PERMIT?
- 48 WHAT TYPE OF SILVER RECOVERY SHOULD I USE?
- 49 WHAT DO I DO WITH MY FOUNTAIN SOLUTION?
- 49 WHAT IS A WASTEWATER SURVEY?
- 49 HOW CAN I PREVENT POLLUTION?
- 52 WASTEWATER DISCHARGES TO SURFACE WATERS
- 52 SEPTIC SYSTEMS
- 52 STORMWATER DISCHARGES

## Fire Safety

- 64 IMPORTANT DEFINITIONS
- 65 FLAMMABLE AND COMBUSTIBLE LIQUIDS
- 66 HOW DO I PLAN FOR AN EMERGENCY IN MY PRINT SHOP?
- 66 WHAT EMPLOYEE TRAINING SHOULD I DO?
- 67 LOCATING FIRE EXTINGUISHERS AND FIRE HOSES
- 68 DO I HAVE TO PROVIDE FIRE EXTINGUISHER TRAINING?
- 68 EMERGENCY PHONE NUMBERS AND ALARM SYSTEMS
- 68 FIRE PREVENTION

## Community Right to Know

- 71 WHAT ARE THE REPORTING REQUIREMENTS?
- 72 AM I REQUIRED TO REPORT MY HAZARDOUS CHEMICALS?
- 73 WHEN DO I FIRST NOTIFY?
- 74 DO I HAVE TO SUBMIT AN ANNUAL REPORT?
- 74 WHAT IS THE HAZARDOUS CHEMICAL INVENTORY FEE RETURN - HC-500?
- 74 RELEASE REPORTING - FORM R

## Spill Reporting

- 76 WHO'S RESPONSIBLE FOR REPORTING A SPILL?
- 76 WHEN DO I REPORT A SPILL?
- 77 WHAT ARE THE REPORTABLE QUANTITIES?
- 78 SPILL SCENARIOS
- 79 SAMPLE EMERGENCY NOTIFICATION LIST
- 80 WHAT INFORMATION SHOULD I REPORT?
- 80 WHAT OTHER AGENCIES NEED TO BE NOTIFIED?
- 81 SECONDARY CONTAINMENT FOR HAZARDOUS MATERIALS

## Storage Tanks

- 82 IMPORTANT DEFINITIONS
- 82 DO I NEED TO REGISTER MY UNDERGROUND STORAGE TANK?
- 83 WHAT UST STANDARDS APPLY?

## Storage Tanks

- 83 MUST I UPGRADE MY EXISTING UST?
- 84 DO I NEED TO KEEP RECORDS FOR MY UST?
- 84 WHAT IS UST FINANCIAL RESPONSIBILITY?
- 84 WHAT DO I DO IF I HAVE A LEAKING UST?
- 85 WHAT ARE THE REQUIREMENTS FOR ABOVEGROUND STORAGE TANKS?
- 85 WHAT ARE THE AST DESIGN AND TECHNICAL STANDARDS?
- 86 OIL POLLUTION PREVENTION ACT & SPCC
- 86 DO I NEED TO GET APPROVALS FROM MY LOCAL JURISDICTION?

## Printer's Checklist

- 87 HOW TO USE
- 88 CHECKLIST

## Attachments

- 100 VOC EMISSIONS WORKSHEET
- 102 LIST OF HAZARDOUS AIR POLLUTANTS
- 104 PRINT SHOP HAZARDOUS WASTES
  - 104 CHARACTERISTIC HAZARDOUS WASTES
  - 106 EXAMPLE WASTE PROFILE SHEETS
  - 110 EXAMPLE MANIFEST
- 111 HAZARDOUS WASTE STORAGE AREA SIGN
- 112 EMERGENCY NOTIFICATION LIST
- 113 CONTACTS AND HOTLINKS
  - 117 LOCAL AIR POLLUTION CONTROL AGENCIES
  - 118 LOCAL PRETREATMENT PROGRAMS

This page intentionally left blank.

# Getting Started

The pursuit to remain competitive has promoted the idea that printers should evaluate the cost of environmental compliance and impact as a bottom line issue. By reducing costs associated with manufacturing and compliance, toxics reduction and pollution prevention offer both direct and indirect cost benefits to the printer.



Lithographers Taking the Road to Environmental Quality

The printer must identify environmental and workplace safety regulations applicable to their shop and put programs in place to ensure compliance. The Indiana Department of Environmental Management (IDEM) has the responsibility to enforce regulations and laws that protect the public and the state's natural resources. Printing Industries of Illinois•Indiana (PII) and IDEM recognize that many small print shops do not have full-time environmental/safety managers.

With a grant from IDEM, PII and active industry representatives have developed this guidebook to explain the regulations applicable to the printing industry, especially offset lithographers. In many instances, the requirements are fully explained; however, information on other resources is provided for those regulations that need additional explanation. Appendices in the back of this guidebook provide the printer with useful information to help you comply with the regulations and evaluate pollution prevention opportunities.

## Taking the Road to Environmental Excellence

**The road to environmental quality begins with using fewer chemicals, generating less waste, and reducing air emissions – stopping pollution at its source.**

Practicing pollution prevention (P2), simply put, is finding ways to reduce or eliminate pollution, whether air emissions, wastewater or hazardous waste. Why manage emissions and wastes when you can eliminate them? When you reduce excess material or chemical use in the printing process, you increase your shop's productivity. P2 can help you reduce your compliance burdens, make your workplace cleaner and safer, increase your competitiveness and save you money.

This section outlines some easy steps for you to take to prevent pollution. After using these steps to reduce or eliminate pollution as much as you can, move along in the workbook to find out how you must manage your remaining wastes, emissions and discharges to be in compliance. If you need help with P2, call IDEM's Office of Compliance and Technical Assistance Program (CTAP) or PII for more information. For contact information, see page 113.

## What You Should be Doing Now

There are some things that printers can do now to reduce pollution.

The following is a list of general P2 techniques that all printers should already be doing to manage their environmental and safety issues in a responsible manner:

Just Do  
P2!

Pollution Prevention Efforts Printers Should be Doing Now

- #1 Make one person (or a person in each department) solely responsible for chemical purchases and inventory control. Purchasing decisions should be based on product performance, environmental/safety requirements, and cost.
- #2 Avoid purchasing similar chemical products from different suppliers. Conduct an inventory to reduce the number of chemical products used in your shop. Use multi-task products as much as possible.
- #3 Track chemical use and wastes to identify opportunities for material reduction.
- #4 Implement best management practices for the storage and handling of stock and other consumable materials. Allow only the smallest amount of material needed in the production areas to get the job done.
- #5 Examine material usage by operation (e.g., solvent use when cleaning ink rollers). Are there new technologies or products that can be used to reduce pollution or waste?
- #6 Clean empty containers as much as practical. Recycle used containers or return them to the supplier or a drum reconditioner.
- #7 Promote good housekeeping with your employees.
- #8 Avoid using flammable (less than 100°F flash point) or F-listed solvents. (See page 104 for more information on F-listed solvents.) Cleaning solvents are a significant factor in VOC emissions and employee exposure.
- #9 Use up or discard old paints, solvents and cleaning products – some may be designated hazardous waste. Use a buy-what-you-need-when-you-need-it policy, and limit the kind of maintenance and janitorial products used in the shop.

Just Do  
P2!

### Case Study

A print shop owner initiated a review of chemical purchasing procedures to find ways to reduce costs. Traditionally, each supervisor purchased their own chemicals as needed. But a review of the MSDSs on file by a supervisor task group found 25% of the products purchased in the shop were duplicative, from different vendors, and at different costs. As these products were used up, the task group reviewed opportunities to consolidate vendors, get better pricing, and look for less toxic substitutes when available. The printer eventually eliminated the similar products and saved money on larger bulk buying agreements.

## Key Environmental Concepts

**Printers need to know how their operations impact the environment.**

This guidebook is designed to help you protect the environment from the following types of pollution:



**Air Contaminant** includes dust, gas, fume, mist, smoke, vapor in any combination when released to the atmosphere.

**Air Emission** is any discharge or release of an air contaminant to the atmosphere.

**Volatile Organic Compound (VOC)** is one type of air contaminant containing carbon and contributes to ground-level smog.

For Printers, air emissions originate from press and cleaning solutions, inks, coatings, adhesives, alcohol and alcohol substitutes.



**Hazardous waste** is a material you intend to discard that is classified hazardous to public health and the environment.

For Printers, hazardous wastes include press cleaning solutions, untreated fixer, parts cleaning solvents, and solvent-based inks, coatings or adhesives.



**Industrial Wastewater** is waste process water from a printing operation, for example a film processor, regardless of volume or pollutant content.

**Discharge** is the release of industrial wastewater to state-protected waters (surface and underground) through pipes, sewers or other means.

For Printers, industrial wastewater includes film/plate processing wastewater, fountain solution, coatings, and adhesives.

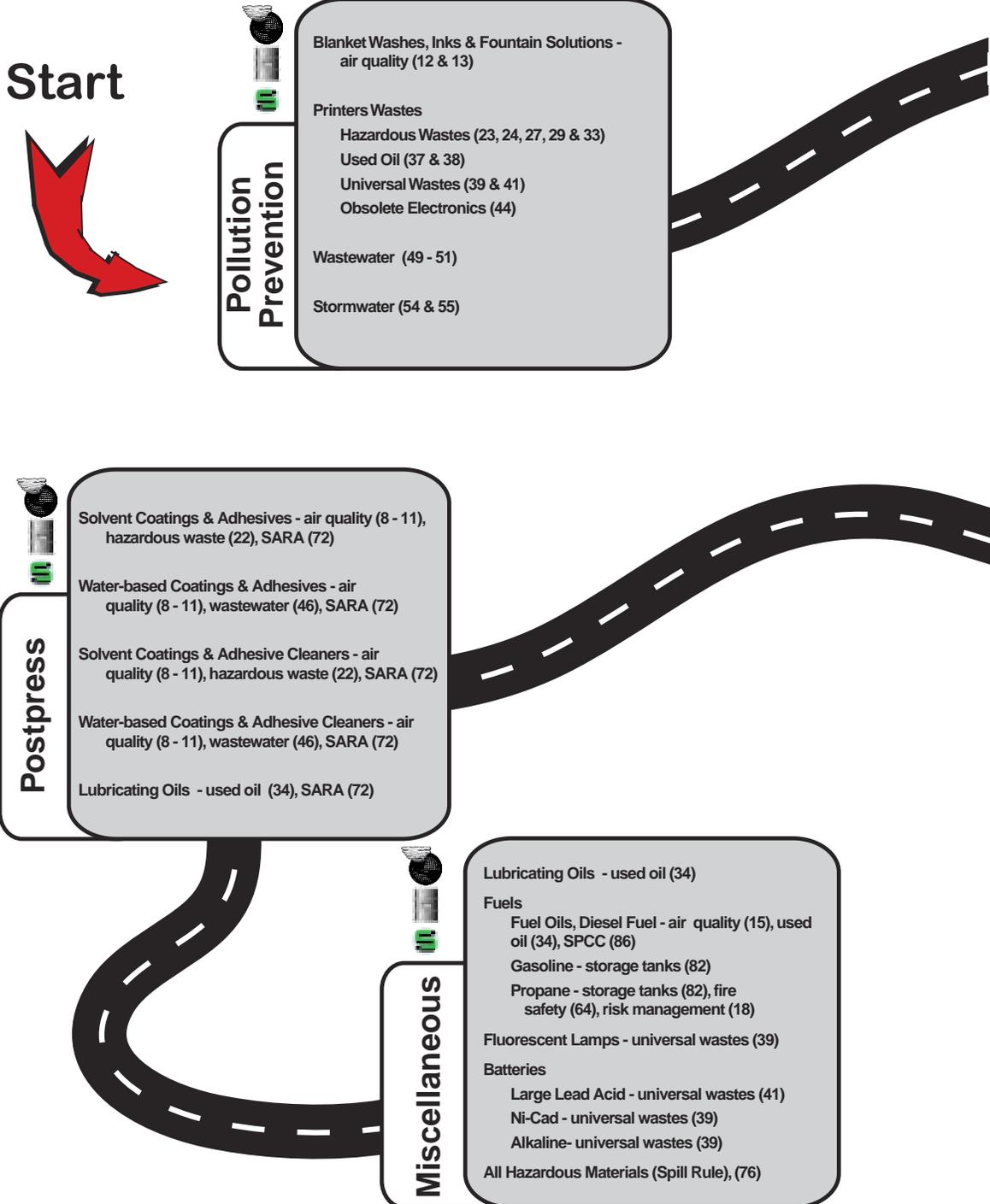
## The Road Map to Environmental Excellence

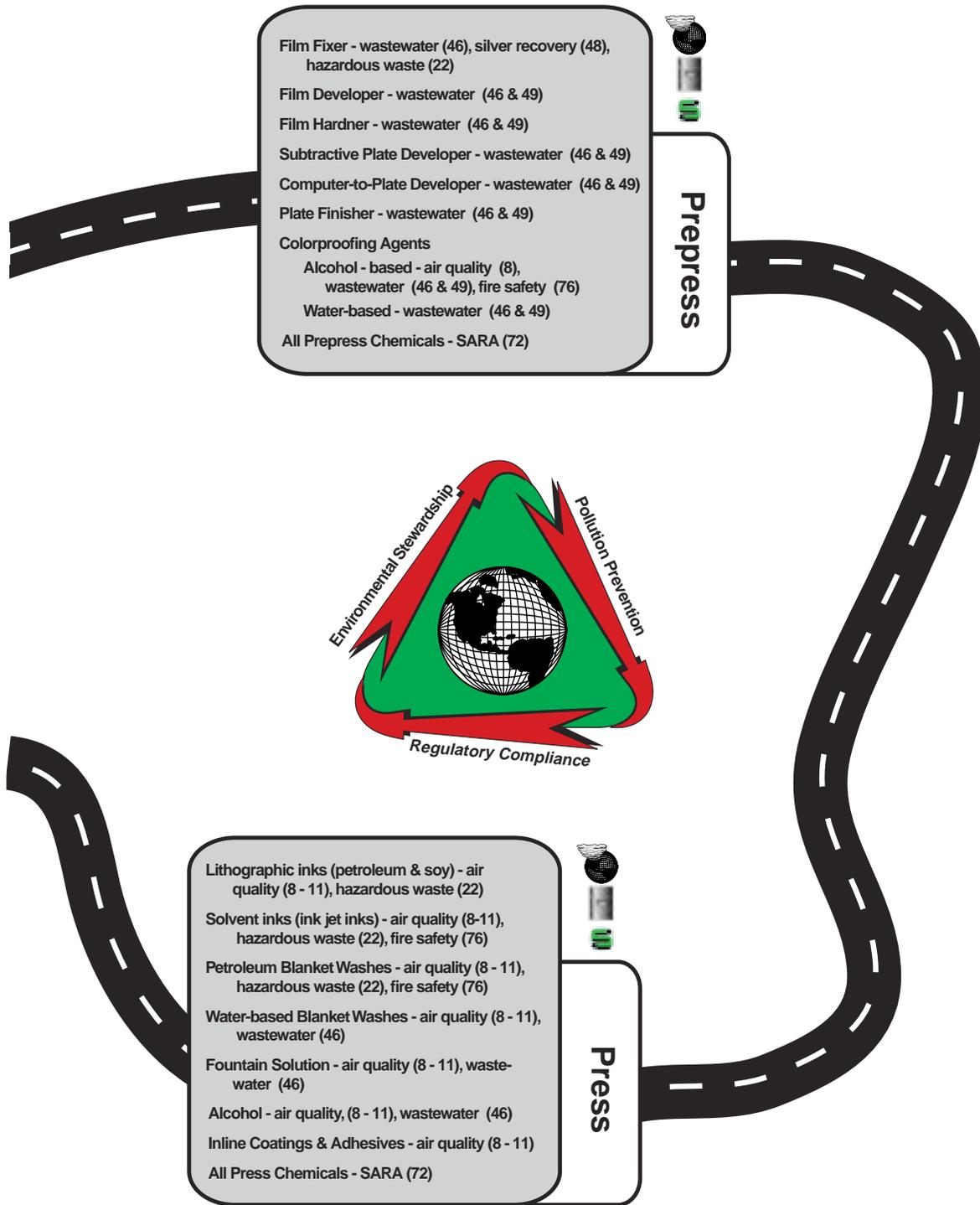
**The road to compliance requires you to stay in the driver's seat and know where you are going.**

As a shop owner, you are faced with the challenge to manage a business, turn a profit, and comply with applicable environmental and workplace regulations. Making compliance efforts an integral part of your printing business is easier than being unprepared for inspections, employee complaints, chemical spills, or emergency situations. To help you proactively manage your compliance efforts, the road map on the following page will lead you down the road to improving our environment.

# The Road To

Guidebook page numbers in parentheses.

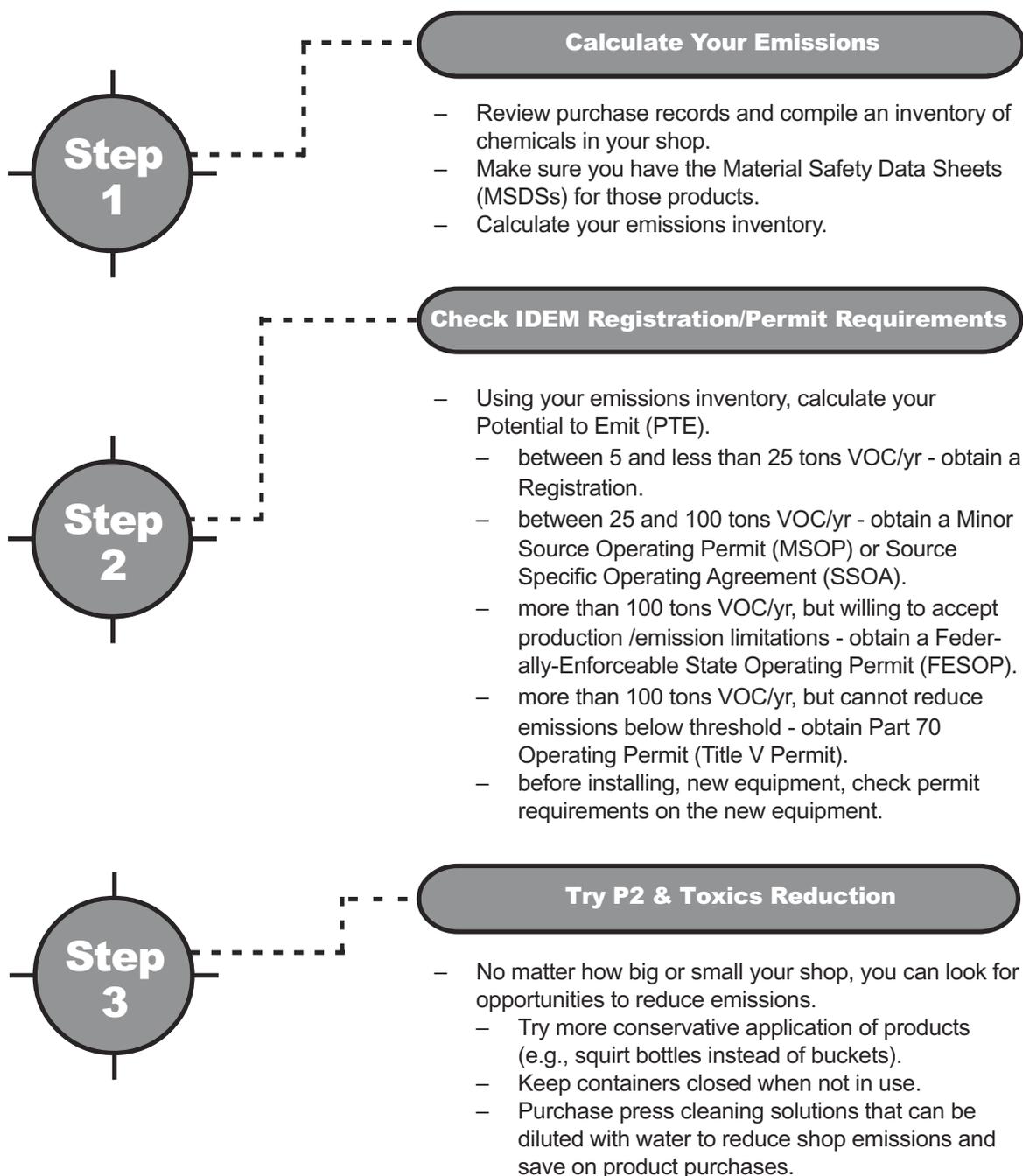




# Environmental Excellence

# Air Quality

Printers emit air pollution and need to comply with IDEM air pollution permitting and control regulations. This chapter summarizes the regulations that apply to your shop. Here are the basic steps you should take to determine if you need a permit.



**Note:** some counties enforce their own air pollution control requirements. Some counties have delegation from IDEM to issue their own permits. If you are located in one of these counties, you need to contact your county agency to determine which, if any, permit and control requirements apply. See page 117 for county agency contacts. Because the regulations in these counties must be at least as strict as IDEM's, virtually all the information in this chapter applies. If there are any differences, the county regulations are more stringent and may have lower permit thresholds. You may need to send your permit application to both the local agency and IDEM. Not all local agencies issue all types of permits. Call IDEM's Office of Air Quality (OAQ) or CTAP for more information.

## What Pollutants are Emitted From Print Shops?

Lithographic printers typically emit these air pollutants: VOCs, HAPs, PM, NOx, CO and SOx.

See the definitions below. Most VOCs and HAPs generally come from press cleaning solutions, fountain solution additives and printing inks. Particulate Matter (PM) is generally paper dust from the cutting, slitting, folding and binding operations. NOx, CO and SOx are generated from fuel burning equipment, such as boilers and press dryers.

Important Definitions

 **Actual Emissions** means the actual amount of a pollutant emitted from each piece of equipment, such as a press.

**Hazardous Air Pollutants (HAPs)** are listed chemicals that are considered hazardous to the environment and public health.

**Nitrogen Oxides (NOx), Carbon Monoxide (CO), Particulate Matter (PM), and Sulfur Oxides (SOx)** are byproducts from the combustion of fuel oil, liquid propane gas (LPG), natural gas, etc. and contribute to smog.

**Nonattainment Area** is a geographical area that does not meet federal air quality standards. An attainment area meets those standards.

**Potential To Emit (PTE)** means the maximum capacity of a source to emit a pollutant under its physical and operational design and operating 8,760 hr/yr.

**Emission**, for printers evaporation is the most common emission. It can be through a stack or emitted into a room and then exhausted through general building ventilation to the outside.

**Emission Unit** is an individual piece of equipment that emits air pollution.

**Volatile Organic Compounds (VOC)** are chemicals, when emitted, that contribute to smog.

## How Do I Get Started and Where Do I Go from Here?

To determine if any IDEM requirements apply, you must compile an inventory.

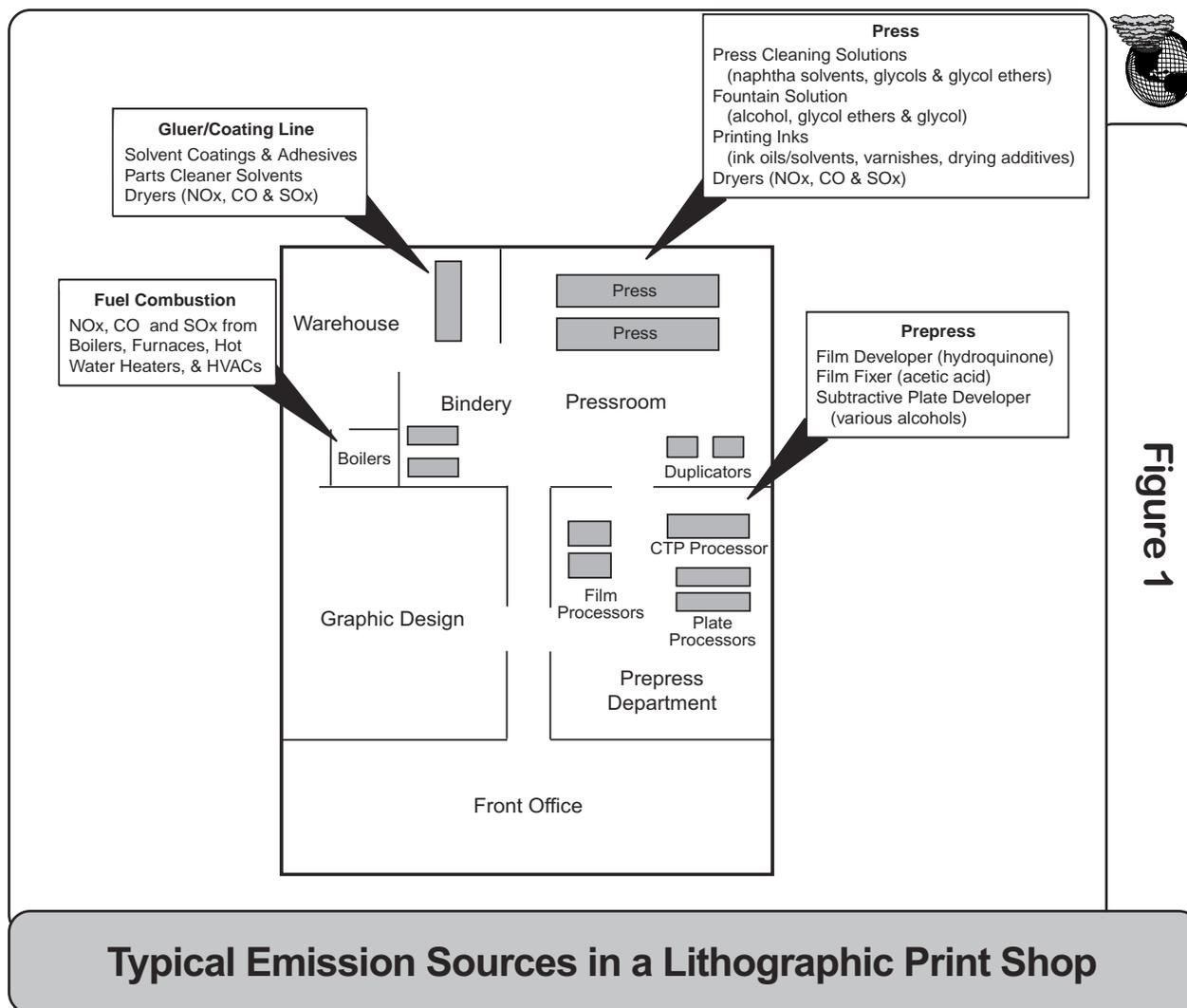
The inventory consists of the types and amounts of air pollution emissions from all sources including: inks, coatings, adhesives, press cleaning solutions, boilers and storage tanks. Film and plate chemistry must be counted depending on the quantities used. You do not have to include products for

Lithographers Taking the Road to Environmental Excellence 7

incidental use, such as janitorial products and paints for maintenance; however, some general maintenance activities must be considered.

**S**tart by listing the products (inks, coatings, adhesives, press cleaning solutions, fountain solution, etc.) you use in your shop. See Figure 1 for guidance. From purchase records, estimate the quantity of each product used in the past 12 months. If you intend to modify or install equipment, estimate product usage based on a similar shop operation or use a worst case scenario with projected utilization without emission controls. Use the VOC calculation worksheets on pages 10 and 11 to calculate your PTE from each emission unit (press/bindery/ coating line) and for the whole shop. Large printers can compare this worst case scenario with projected actual emissions and determine whether limiting emissions may allow you to get a FESOP (page 16) or SSOA (page 18). **For calculating VOCs in sheetfed, nonheat-set offset lithographic inks, you can use a 95% retention factor for the ink oils that remain on the paper (only 5% of the VOCs is emitted). For heatset printing, the retention factor is only 20%.**

**W**ith this inventory, you can now compare your emissions data with the registration and permitting thresholds in this chapter. The thresholds vary based on: 1) your PTE; and 2) whether your shop is in a nonattainment area. ( Currently, Lake and Porter counties are nonattainment areas for ozone.)



## How Do I Determine my Potential VOC Emissions?

You are required to determine your PTE to see if you need to register or obtain a permit from IDEM.

There is a multistep process to make this determination. First, you must determine your VOC-containing material usage for the past 12 months. You then must estimate your Potential to Emit (PTE) based on operating your shop at maximum capacity.

Determine  
VOC-containing  
Material  
Usage for the  
Past 12 Months



The first thing you must do is determine your VOC-containing product usage. This can be done one of two ways. If you only buy materials (e.g., inks solvents, fountain solution, adhesives, coatings, etc.) for immediate use with little remaining inventory, then compile a list of products and their purchases for the past 12 months. If you maintain an inventory of materials, calculate usage by taking initial inventory, plus purchases, minus remaining inventory, again over 12 months. This is your material usage.

Next, determine the VOC Content of each material. Check the MSDS for each product. Look under the Physical Characteristics Section for “VOC Content” or “Percent VOCs”. Do not use “% Volatility” because this may include water. The VOC Content should be in weight percent or lbs/gal. If not, then call your product supplier for this information.



Determine  
VOC Content  
of Each  
Material

Calculate  
Your VOC  
Potential  
To Emit



IDEM registration and permit thresholds are based on Potential to Emit (PTE) from all VOC emission units in your shop. (Refer to definitions on page 7.) PTE represents emissions at maximum annual rated production capacity. You can calculate PTE from your inks, coatings, adhesives, press cleaning solutions, and fountain solution. Emissions from all of these VOC-containing products are calculated in pounds per million square inches. **(However, for the purpose of determining whether you must register your shop’s emissions with IDEM, small lithographic printers can estimate PTE from alcohol, press cleaning and fountain solutions based on actual material usage. See Parts 1 and 2 on the VOC Emissions Worksheet. All other printers must calculate PTE from alcohol, press cleaning and fountain solutions in pounds per million square inches using the equations in Part 3.)**



## Part 1: Calculate Your Press Cleaning and Fountain Solution Emissions

(for small printers using alcohol, press cleaning and fountain solutions)

Determine  
VOC-containing  
Material  
Usage for the  
Past 12 Months



- 1) Quantity of Blanket Wash during the past 12 months (include all similar products in the total). \_\_\_\_\_ gallons
- 2) Quantity of Alcohol during the past 12 months, if any used.  
\_\_\_\_\_ gallons
- 3) Quantity of Fountain Solution during the past 12 months.  
\_\_\_\_\_ gallons

=====

Determine  
VOC Content  
of Each  
Material



- 4) VOC Content of Blanket Wash  
\_\_\_\_\_ lbs VOC/gal of product
- 5) VOC Content of Fountain Solution  
\_\_\_\_\_ lbs VOC/gal of product

Note: If the blanket wash is 90-100% VOC, just use the specific gravity multiplied by 8.34, giving you estimated lbs VOC/gal. If the MSDS does not have the VOC Content, call your supplier.

=====

Calculate  
Your Actual  
VOC  
Emissions



- 6) \_\_\_\_ gals X \_\_\_\_ lbs/VOC/gal = \_\_\_\_\_ lbs VOC/yr
- 7) \_\_\_\_ gals Alcohol X 6.7 lbs VOC/gal = \_\_\_\_\_ lbs VOC/yr
- 8) \_\_\_\_ gals Fountain Solution X \_\_\_\_ lbs/VOC/gal = \_\_\_\_\_ lbs VOC/yr
- 9) Add lines 6 through 8 \_\_\_\_\_ lbs VOC/yr
- 10) **Your Actual VOC Emissions for the solutions are:**  
\_\_\_\_\_ lbs VOC/yr ÷ 2000 = \_\_\_\_\_ tons VOC/yr

## Part 2: Calculate Your Solvent Emissions

(for small printers using alcohol, press cleaning and fountain solutions)

Estimate  
Annual Production  
Hours and Operating  
Capacity



- 1) Hours of production (include makeready, pressruns & blanket washing) during the past 12 months. \_\_\_\_\_ hr
- 2) Percent of operating capacity \_\_\_\_\_ %  
(Average capacity for all presses.)

=====

Calculate  
blanket wash,  
alcohol and  
fountain solution  
PTE



- 3) **Calculate your PTE for blanket wash, alcohol and fountain solution is:**  
\_\_\_\_\_ tons VOC/yr X 8,760 hr/yr = \_\_\_\_\_ tons VOC/yr  
(\_\_\_\_ prod. hr X \_\_\_\_ % capacity ÷ 100)

VOC Emissions Worksheet for Lithographic Printers



## Part 3: Calculate Your Ink, Coating & Adhesive Emissions

(for midsize and large printers, also use for alcohol, press cleaning and fountain solutions)

Calculate  
Your Shop's  
PTE



1a) For each sheetfed press use the following equation to calculate millions of square inches per year (MMin<sup>2</sup>/yr) throughput.

$$\frac{\text{Max Print Area (in}^2\text{/sheet)} \times \text{Max Sheets/hr} \times 8,760 \text{ hr/yr}}{1,000,000} = \text{MMin}^2\text{/yr}$$

1b) For each web press and coating/adhesive line use the following equation to calculate millions of square inches per year (MMin<sup>2</sup>/yr) throughput.

$$\frac{\text{Max Press Speed (ft/min)} \times 12 \text{ in/ft} \times \text{Max Print Width (in)} \times 60 \text{ min/hr} \times 8,760 \text{ hr/yr}}{1,000,000} = \text{MMin}^2\text{/yr}$$



2) Determine separately the maximum coverage (lbs. of ink/coating/adhesive) per MMin<sup>2</sup>/yr for each press/line. This value is usually between 1-4 lbs ink for process color presses. For 1-3 unit presses, the value is usually between 0.3 and 1.0 lbs ink. The equipment supplier can help you determine it or you can calculate it from actual use.



3) Calculate VOC emissions from ink/coating/adhesive. Repeat for each VOC in ink/coating/adhesive.

$$\frac{\text{_____ lbs. ink/MMin}^2\text{/yr} \times \text{Weight \% VOC} \times 0.05}{\text{X Throughput (MMin}^2\text{/yr)} \div 2,000 \text{ lbs/ton}} = \text{_____ tons VOC/yr}$$

Note: Use 0.8, instead of 0.05, for heatset lithographic operations.



4) Add all VOC emissions for inks/coatings/adhesives calculated in line 3.

$$\text{_____ tons/yr} + \text{_____ tons/yr} + \text{etc.} = \text{_____ total tons VOC/yr}$$

## Part 4: Calculate Your Shop's PTE

Calculate  
Your Shop's  
PTE



1) Take the results from line 3 of Part 2 on bottom (page 1 of this worksheet) and add it to line 4 of Part 3.

\_\_\_\_\_ tons VOC/yr (blanket wash, alcohol & fountain Solution)

\_\_\_\_\_ tons VOC/yr (inks, coatings & adhesives)

\_\_\_\_\_ tons VOC/yr PTE

## DO I Have to Register my Shop with IDEM?

If your shop's emissions exceed 5 tons VOC/yr, you must apply for a Registration.

Take the PTE emissions you calculated on the VOC Emissions Worksheet (page 10), is it more than 5 tons VOC/yr? Remember, use your PTE **assuming no pollution control equipment**. If your PTE is more than 5 tons/yr, you must apply for a Registration. For many small printers below this threshold, the emissions are considered exempt from IDEM's registration and permitting requirements.

The registration process is fairly simple. Call IDEM's Office of Air Quality (OAQ) to obtain the proper

forms and guidance or visit the permit guide on IDEM website at [www.in.gov/idem/guides/permit](http://www.in.gov/idem/guides/permit). See page 113 for contacts. If you have more complex operations, you may need an experienced consultant to assist you in calculating your shop's VOC PTE and complete the application forms.

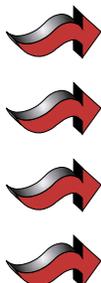
**Important Tip**

If, as a small printer, you are close to IDEM's registration threshold based on the VOC Emissions Worksheet, then you should recalculate your shop's PTE using the equations in Part 3 of the worksheet for alcohol, press cleaning and fountain solution. This will ensure that you have made the proper determination on whether you must register your print shop with IDEM.

## What If I am Exempt From Registration?

IDEM still recommends that you do as much P2 in your shop as possible.

Not required to register with IDEM? You should still take the opportunity to look specifically at P2 techniques that apply to your operations. All printers can do P2. Some of these techniques can be implemented at little to no cost. The biggest challenge faced by a printer is employee awareness. Management commitment with employee awareness training will help you reduce VOC emissions, improve environmental quality and maintain a safe workplace. Look at the following P2 techniques to determine which ones you can use.



Look for ways to reduce blanket and roller wash usage.

Keep containers of inks, solvents, fountain solutions and soiled shop towels closed.

Use alcohol substitutes in the fountain solution.

Use low VOC blanket and roller washes that have a vapor pressure of less than 10 mm Hg (mm mercury at 68°F).



Use squirt bottles or plunger cans for blanket wash application.



Use blanket washes that can be diluted with 10%, 20% or 50% water for general press cleaning.



Avoid blanket washes, coatings and adhesives containing chlorinated solvents, such as methylene chloride and 1,1,1-trichloroethane. These solvents are regulated as HAPs (page 17).

**Example 1**

A printer uses only three drums (165 gals) of blanket wash annually. Using the VOC Emissions Worksheet, the printer's PTE is approximately 4.0 tons VOC/yr. To keep VOC emissions low, here are some P2 techniques for this printer:

- Uses an alcohol-free fountain solution.
- Uses a press cleaning solution with low vapor pressure.
- Uses squirt bottles instead of buckets for solvent application.
- Mixes water with the press cleaning solution for light cleaning.
- Reuses dirty solvent for heavy duty parts cleaning followed by a clean rinse.

This printer eliminated alcohol and reduced blanket wash purchases. VOC emissions were reduced from the operations – an environmental improvement.

**Example 2**

This printer uses 20 drums (1,100 gals) of press cleaning solution and four drums of alcohol. The PTE is 11 tons VOC per year. Here are several P2 techniques this printer can implement to stay below IDEM's registration threshold:

- Use an alcohol-free fountain solution.
- Use squirt bottles instead of buckets for solvent application.
- Purchase a small solvent reclaimer to reuse solvent.
- Evaluate and use waterbased cleaning solutions for light duty cleaning.

The solvent reclaimer costs \$3,000. The printer can reclaim blanket wash for reuse and only one drum of waste is generated per year. Four drums of alcohol are also eliminated. Total savings is \$2,600 in reduced costs of alcohol and blanket wash.

Just Do P2!

P2 Examples

## Does my Shop Need an Operating Permit for VOC Emissions?

**If your PTE exceeds 25 tons VOC /yr, then an operating permit is required.**

If you are were exempt from a permit and plan to install equipment (e.g., a press or coating line) that increases your PTE above 25 tons VOC/yr, then you must apply for a construction and operating permit. There are several types of operating permits as listed below:

- between 25 and 100 tons/yr - obtain a Minor Source Operating Permit (MSOP) or Source Specific Operating Agreement (SSOA).
- more than 100 tons/yr, but willing to accept production or emission limitations - obtain a Federally-Enforceable State Operating Permit (FESOP).

→ more than 100 tons/yr, but cannot reduce emissions below this threshold - obtain Part 70 Operating Permit (Title V Permit).

**A**fter application, IDEM will issue a construction permit that allows you to install, but not operate equipment. Call OAQ for the permit application forms or download them from IDEM's website. See page 113 for website address.

**I**n order to operate the new equipment, the construction permit must be converted to an operating permit. Once construction is complete, you complete an Affidavit of Construction (the form will be included with your construction permit). Send the Affidavit to the OAQ Permits Branch. If you construct exactly what you were approved for, then you can begin operation on the postmarked date of the affidavit that you sent to OAQ. If the as-constructed is different, then you must obtain a permit amendment before beginning operation. **Any operations or activities conducted outside of the permit conditions could result in IDEM enforcement actions, which may include penalties.**

- 

Call OAQ for input and guidance. There is always a permit reviewer of the day available during business hours. OAQ staff can provide you with important information and permitting issues you must address in the application. You may call IDEM's CTAP for confidential assistance. See page 113 for contact.
- 

Obtain assistance from a trade association, such as PII, or use a consultant experienced in printing.
- 

Provide as much information as possible to substantiate your emission calculations. OAQ will review the application for completeness. If there is missing information, you will be notified and the permit process will be delayed.
- 

Call OAQ to find out how the review process is progressing.
- 

IDEM will issue a draft permit for public comment. After public comment, it becomes final and you can begin construction.
- 

Retain copies of all correspondence with IDEM. To confirm receipt of documents, use registered mail/return receipt requested.

## What If my Shop is Located in Nonattainment County?

Some counties have more stringent registration and permitting requirements.

**I**f you are in Clark or Floyd County, two nonattainment counties, call IDEM's OAQ, CTAP or local air pollution control agencies (page 117) for more information. There are different rules for these counties because of their ozone nonattainment status.



Nonattainment Areas for Ozone as of 1/2000

## I Have Pollution Control Equipment. How is this Handled?

The equipment does not need a permit, but you may need a permit for any emissions from the equipment.

Registration and permitting requirements are based on what your PTE would be **without** any control equipment (afterburners, dust collectors, etc. that exhaust to the outside). Pollution control equipment reduce emissions from an emission unit (press, coating line, bindery, etc.). After June 1994, control equipment registration was eliminated. However, there are specific equipment emissions, i.e., from afterburners, that may still require registration or a permit. Contact OAQ for guidance.

## What About Other Pollutant Emissions from my Shop?

You probably have equipment that emit NOx, SOx CO or PM10 as well.

The primary sources of these pollutants include: emergency generators, water heaters and boilers. However, printing equipment (online/offline dryers, bindery lines, etc.) may also emit pollutants in addition to VOCs. See definitions of each pollutant on page 7.

Because there are so many different sources of these pollutants in a print shop, the registration and permitting requirements apply to total shop emissions (as PTE) by pollutant. If your emissions exceed the following thresholds, you must register or obtain a permit from IDEM.

### Registration & Permit Thresholds

Air Pollutant	Registration	Construction/Operating Permit
NOx	10 tons/yr	25 tons/yr
SOx	10 tons/yr	25 tons/yr
CO	25 tons/yr	100 tons/yr
PM10	5 tons/yr	25 tons/yr

Stitcher/trimmer, high-speed press lines and bailers are sources of dust and other PM10. To manage airborne dust in a print shop, various ventilation and filtration techniques are used. The emissions from this equipment may be subject to registration or permitting based on PTE. General room ventilation equipment is exempt.

The following restrictions apply to boilers, space heaters, water heaters, ovens and dryers to

remain exempt from any permits. Equipment with annual fuel usage over these thresholds must be registered and may require an operating permit or Source Specific Operating Agreement (SSOA). There are also thresholds for oil-fueled equipment and dual-fuel equipment. If you have this equipment, then you should call OAQ for guidance and application forms. Be sure to have the following information: type of equipment; fuel type; and heat input capacity in Btu/hr (usually found on the equipment name plate).



**Any unit with a maximum heat input capacity of less than 0.3 MMBtu/hour (300,000 Btu/hr) that use natural gas as fuel is exempt.**



**Any unit with a maximum heat input capacity between 0.3 MMBtu/hr and 10 MMBtu/hr (10,000,000 Btu/hr) and use natural gas as a fuel are restricted to annual fuel usage of 714,000,000 ft<sup>3</sup> of natural gas is exempt.**

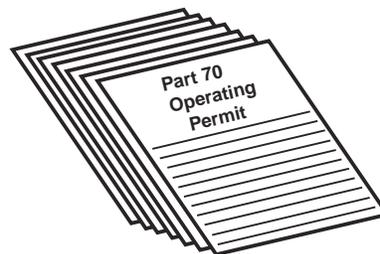
There are different IDEM thresholds for registering and permitting internal combustion sources like emergency generators. The thresholds are based on the type of source, fuel, and pollutant emissions (as PTE). You should contact OAQ for guidance.

## What is a Part 70 Operating Permit?

**Part 70 Operating Permits are for Major Sources of emissions.**

Part 70 Operating Permits are also known as Title V Permits. Unlike the permits that were issued by IDEM before 1990, these permits are required under the federal Clean Air Act Amendments of 1990 and reserved for large or Major Sources.

These emission thresholds are based on PTE and apply to all Major Sources even if they have other IDEM Operating Permits. Only the largest printers would be subject to these permit requirements. A printer has the option of applying for a Federally Enforceable State Operating Permit (FESOP). This means the printer will have to agree to a combination of permit restrictions on material inputs, equipment, operating hours and pollution control equipment. See the thresholds table on the next page for Part 70 Operating Permits.



## Part 70 Permit Thresholds

Air Pollutant	Permit Threshold	
	Statewide	Lake & Porter Counties
VOC	100 Tons/yr	25 Tons/yr
NOx	100 Tons/yr	25 Tons/yr
SOx	100 Tons/yr	100 Tons/yr
CO	100 Tons/yr	100 Tons/yr
PM10	100 Tons/yr	100 Tons/yr
HAPs	10 tons single HAP/yr or 25 tons total HAPs/yr	10 tons single HAP/yr or 25 tons total HAPs/yr

NOTE: IDEM's Title V Program also applies to Major Sources subject to the Prevention of Significant Deterioration (PSD) Program and New Source Review (NSR) Program for nonattainment areas (areas that do not meet federal air quality criteria, e.g., Lake and Porter Counties).

If a printer currently has an Operating Permit, but increases its PTE above Part 70 Permit thresholds, the printer must submit an application to OAQ before constructing and operating the new or modified equipment.

## What About Hazardous Air Pollutants?

**Hazardous Air Pollutants (HAPs) are chemicals that are considered hazardous to the environment.**

HAPs are regulated by USEPA and IDEM. See page 102 for the complete list of HAPs. Most Printers do not use products that contain HAPs in significant quantities. If you are exempt from IDEM registration using the VOC Estimator Worksheet on page 10, you are also exempt from the HAP requirements. However, if you use HAP-containing products in significant quantities, you must determine whether you exceed the HAP thresholds in the above table and need a Part 70 permit.

**HAPs Commonly Found in Lithographic Print Shops**



CAS Number	Chemical
98828	Cumene
100414	Ethylbenzene
107211	Ethylene glycol
50000	Formaldehyde
110543	n-Hexane
7647010	Hydrochloric Acid
123319	Hydroquinone
71556	1,1,1-Trichloroethane
75092	Methylene chloride
127184	Tetrachloroethene
108883	Toluene
79005	1,1,2-Trichloroethane
79016	Trichloroethylene (TCE)
1330207	Xylene (mixture)
95476	o-Xylene
108383	m-Xylene
106423	p-Xylene
7440473	Chromium compounds
I-311	Certain glycol ethers
7439921	Lead compounds
7439965	Manganese compounds
7782492	Selenium compounds

## There Is Also an SSOA for Graphic Arts Operations

Certain Printers may be able to get an SSOA.

Certain print shops may obtain an Source Specific Operating Agreement (SSOA) in place of an Part 70 Operating Permit. The SSOA is a means of limiting the PTE of operations that have a PTE above the pollutant thresholds for Part 70 Operating Permits, but have actual emissions of those pollutants at levels less than or equal to half the Part 70 thresholds. (See previous discussion of Part 70 Operating Permits on page 16.) By obtaining a SSOA, you are exempt from applying for and obtaining the Part 70 Operating Permit.



When applying for a SSOA, it must cover all of the existing and any known future proposed emission units and processes in your shop. A SSOA is specific to large surface coating and graphics arts operations. There are material use restrictions (particularly in Lake and Porter Counties) and certain recordkeeping requirements for printers who obtain a SSOA.

Interested printers should contact OAQ or CTAP for guidance on applicability and the permit process.

## Other Air Quality Compliance Issues

### Permit Requirements

You must comply with the conditions of your operating permit.

When you receive a construction or operating permit, you must comply with all of its provisions. Most permits require monthly recordkeeping on material usage or pollutant emissions. Larger printers may also have to monitor and record operating parameters of pollution control equipment or perform stack testing. To ensure compliance with your permit, you should make any monitoring, testing and recordkeeping a regular part of your operations.

### Do I Have to Report my Emissions Each Year?

You may be required to submit an Annual Facility Emissions Statement.

Larger print shops may be required to submit an annual Facility Emissions Statement to IDEM. If your shop is located in Clark, Elkhart, Floyd, Lake, Marion, Porter, St. Joseph or Vanderburgh Counties

and your PTE for VOC, and NOx are equal to or greater than 10 tons/yr, then you must report by April 15th annually. Elsewhere in the state, the threshold is 100 tons/yr for all pollutants, VOC, NOx, SOx, CO and PM. The due date is July 1st each year. The forms and guidance materials are provided by OAQ.

## What about the MACT Standards?

**The MACT standards do not apply to lithographers.**

The Maximum Achievable Control Technology (MACT) standards only apply to wide-web flexographic, publication rotogravure and packaging rotogravure operations that use HAPs in excess of the Part 70 Permit thresholds. See previous discussion on HAPs. For guidance, call OAQ or CTAP.

## Do I Need a Risk Management Plan?

**A Risk Management Plan (RMP) allows printers to help the government coordinate responses in a chemical emergency.**

The Clean Air Act of 1990 required EPA to focus on the prevention of chemical accidents. Companies that produce, handle, process, distribute or store certain chemicals above specified thresholds must identify the hazards and assess the risks of potential chemical accidents, known as Risk Management Planning. Risk Management Planning integrates local government emergency preparedness and response, pollution prevention, and worker safety by anticipating and developing preventive measures for potential chemical accidents – small or large.

Risk Management Planning is required for printers that use a threshold quantity of a listed substance in a single process. Currently, there are over 100 listed substances with established threshold quantities of 500 to 20,000 lbs. For flammables, the threshold quantity is 10,000 lbs.

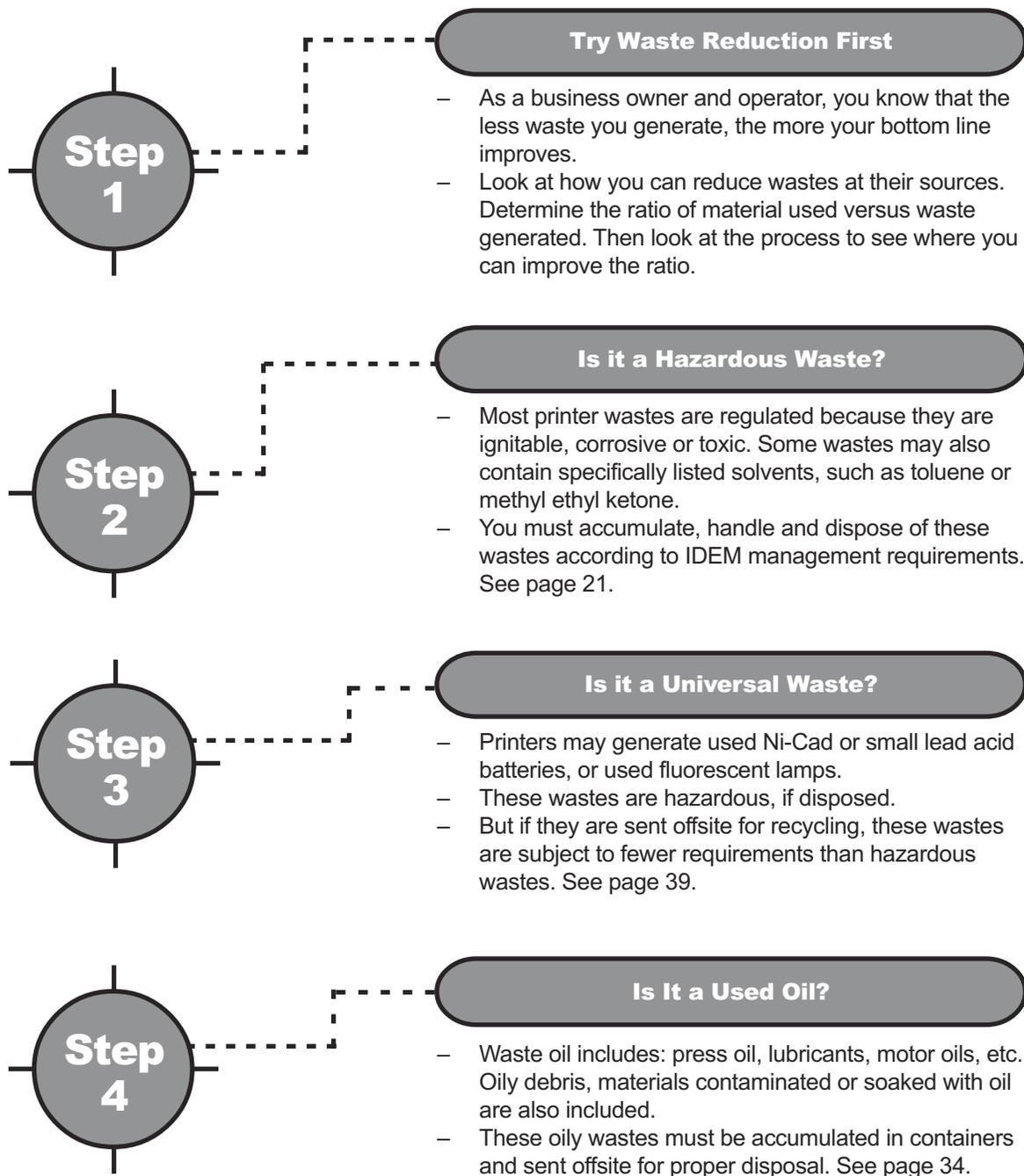
If you store in bulk quantities and use flammable substances, you need to determine if the material is listed. If so, you must determine if you exceed the 10,000 lbs threshold. You only quantify the flammable substance itself and not the whole mixture, unless it is 100%.

For printers, bulk storage of flammable (flash point less than 100°F) solvents could trigger the RMP requirements. If you store more than 1,500 gallons of a typical flammable petroleum solvent (density of 6.7 lbs/gal), you would exceed the 10,000 lbs threshold quantity. Generally, offset lithographic inks do not contain listed substances and gasoline for motor vehicles is exempt.

If you exceed any of the thresholds, you are required to develop a RMP that must be submitted to USEPA. Printers that require assistance should contact the Federal Small Business Assistance Program, the Emergency Planning and Community Right-to-Know Hotline, or IDEM. See page 113 for contact information.

# Land Quality

Printers generate different types of waste that may impact environmental quality or public health if discarded improperly. Different wastes must be handled and disposed according to IDEM requirements. Here's how to determine the proper method of waste disposal.



# Hazardous Waste

**A**s a responsible business owner, you must manage all your wastes in a safe and environmentally responsible manner. Some printer wastes may be regulated as hazardous wastes. USEPA and IDEM regulate businesses that generate hazardous wastes as well as the facilities that store, treat or dispose of those wastes. Most printers generate hazardous wastes, but do not treat or dispose of them. Instead, printers arrange for transportation and then treatment or disposal of their hazardous wastes at other facilities. These facilities and transporters must be registered to handle hazardous waste. IDEM regulations require generators, transporters and facilities to properly manage their hazardous wastes.

**T**he IDEM regulations place the burden on you, as a waste generator, to properly identify and dispose of your wastes. You retain responsibility even when other companies dispose of your wastes – this is cradle-to-grave responsibility. You may be subject to significant penalties if you fail to properly identify your hazardous waste and ensure its proper management.

**B**y choosing materials that do not generate hazardous waste, you may be able to reduce your company’s liability. Generating less hazardous waste may also reduce the IDEM requirements that apply to your shop.



## Important Definitions

**Hazardous Waste** is a waste that, because of its source, constituents, or characteristics is regulated as hazardous. If improperly managed or disposed, the waste may impact the environment or threaten public health.

**Generator** means a business or person that generates hazardous waste.

**Transporter** means an IDEM-registered company that transports hazardous waste from the generator to a treatment/disposal facility.

**Treatment or Disposal Facility** means a facility registered by IDEM to recycle, store, treat or dispose of hazardous waste.

**Generator Status** refers to three size categories of hazardous waste generators based on monthly generation rates and quantities stored.

**EPA ID Number** is an identification number assigned to a hazardous waste generator, transporter or disposal facility. This ID number is unique to company and location.

**Satellite Accumulation Area** means a designated location within a work area where hazardous waste is accumulated near its point of generation and under the control of the operator of the process generating the waste.

**Hazardous Waste Storage Area** means a location that is designated for accumulating hazardous waste. It is not near the point of waste generation (like a Satellite Accumulation Area) and is subject to time or quantity limits according to generator status.

**Accumulation Start Date** is the date the clock starts for accumulation time limits that vary dependent on generator status.

**Hazardous Waste Manifest** is a special shipping paper that must accompany a shipment of hazardous waste. It is used to track who generated, transported and disposed of the hazardous waste.

**Landfill Disposal Restriction (LDR) Form** is a form that tells a disposal facility how the hazardous waste should be treated before it can be landfilled. This form is signed by the generator and accompanies the manifest.

## How Do I Know a Waste is Hazardous?

Use your knowledge of the process and materials, use a **Material Safety Data Sheet (MSDS)** or test a representative waste sample.



**Y**ou must determine if a waste is hazardous or nonhazardous. A registered transporter, disposal facility, or consultant may be able to assist you in characterizing your waste. You should complete a Waste Profile Sheet for each separate waste stream (e.g. inks, solvents, coatings, etc.) describing the waste and keep it on file. See pages 106 - 109 for sample Waste Profile Sheets or they may be provided by the disposal facility. If

changes in your materials or printing operation cause the waste to change, then you must re-evaluate it to ensure proper classification, handling and disposal.

**W**astes are hazardous if they are specifically “listed” or have certain characteristics. Below are four types of hazardous wastes. The four characteristics that make a waste hazardous are: corrosivity, ignitability, reactivity, and toxicity.

EPA Waste Codes	Waste Description	Typical Wastes	Hazardous Wastes
F001 to F039	<b>Non-Specific Source Wastes.</b> These are specific solvent wastes. Known as the “F-Listed Solvents”.	Blanket washes with toluene, methylene chloride, xylenes in excess of 10% concentration.	
K001 to K161	<b>Specific Source Wastes.</b> These are wastes from specific industries.	Printer wastes are not likely on this list.	
P001 to P205 U001 to U411	<b>Discarded Commercial Chemicals, Container and Spill residues.</b> Few printing wastes are found on this list.	Printer wastes are not likely on this list.	
D001 to D039	<b>Characteristic Wastes.</b> A waste that is not “listed”, but may still be ignitable, corrosive, reactive or toxic according to certain waste testing procedures.	Blanket washes with petroleum solvents are ignitable. Silver-bearing wastewater is toxic. Speciality inks with metal pigments are toxic. Solvent inks, coatings and adhesives are ignitable.	



**H**azardous wastes generated by printers include: untreated spent fixer; petroleum-based cleaning solvents; ink contaminated with solvent; some speciality inks; and solvent-based coatings and adhesives. Subtractive plate, plate finishers and film developers are generally nonhazardous.

**L**ithographic inks are generally not regulated as hazardous, unless they are mixed with press cleaning solvents. The transporter may require

Just Do P2!

**P2 & Toxics Reduction Tip**

Some printers use acetone, toluene, 1,1,1-trichloroethane, or methylene chloride in their press cleaners. Because they are listed wastes, these wastes may be more costly to dispose of.

If possible, avoid using these solvents because of their toxicity, and substitute with petroleum naphtha solvents. Most of F-Listed Solvents are also considered Hazardous Air Pollutants (page 17) and are regulated by OAQ.

**Case Study**

A large printer converted to a toluene-free press cleaning solvent eliminating his annual Release Reporting fees of \$6,000.

you to test a representative sample of the waste ink to prove that it is nonhazardous. (You should have a Waste Profile Sheet and the necessary test results on file to show IDEM that the waste ink is nonhazardous.)

**What are the General Hazardous Waste Management Requirements?**

You must safely manage your hazardous wastes.

**H**azardous wastes must be managed in a safe manner to protect your employees and the environment. All hazardous waste generators must:



**Perform a hazardous waste determination on all waste streams.**



**Track and record the amount of hazardous waste generated.**



**Label all containers of hazardous waste to accurately identify the contents.**



**Ensure delivery to a registered hazardous waste recycler, treatment, storage or disposal facility.**



**Use DOT approved drums and containers for offsite shipments.**

**D**o not mix hazardous wastes and nonhazardous wastes. The resulting mix of wastes is generally regulated as hazardous.

**Y**ou may have hazardous waste with a flash point of less than 100°F. Containers for these wastes must be electrically grounded when material is added or removed. This also applies to virgin materials with low flash points. See page 64.

**How Do I Determine my Generator Status?**

**Prepare an inventory of all hazardous wastes you generate on a monthly basis.**

**I**f you generate hazardous waste, you must determine your generator status. Your status refers to the amount of hazardous waste you generate on a monthly basis. Remember - the more waste you generate, the more requirements that apply to your shop.

## Generator Status of Magenta Printing Company

Activity	Waste	Hazardous?	Why?	Monthly Amount (lbs)
Prepress	Spent fixer	Yes	Toxic (> 5 ppm silver)	120
Pressroom	Waste cleaning solvents	Yes	Ignitable (flash point < 140°F)	175
Pressroom	Waste lithographic ink	No	Not toxic or ignitable	Not counted
Bindery	Waste solvent adhesives	Yes	Ignitable (flash point < 140°F)	40
<b>Total Hazardous Waste Generated (lbs/month)</b>				<b>335</b>

To determine your hazardous waste requirements, you must know your hazardous waste generator category. (From the example above, Magenta Printing generates about 335 pounds of hazardous waste each month.) In some months, a printer may generate more or less hazardous waste. Magenta Printing would be classified as a Small Quantity Generator of hazardous waste. Compare your monthly hazardous waste generation with the categories below. Remember, the lower your category, the few requirements that apply.

### Case Study

After performing a hazardous waste inventory, a small printer evaluated different press cleaning methods to reduce blanket wash and its disposal costs. By using squirt bottles to blanket wash instead of open buckets, this printer reduced its blanket wash costs by \$500 per year.

Just Do P2!

P2 Tip

Conditionally-Exempt Small Quantity Generator (CESQG)



generates less than 220 lbs/month or approx. 1/2 drum

Small Quantity Generator (SQG)



generates between 220 lbs./month and 2,200 lbs/month or approx. 1/2 -5 drums

Large Quantity Generator (LQG)



generates more than 2,200 lbs/month or more than 5 drums

## Do I Need an EPA ID Number?

If you are a SQG or LQG, you must have a unique site-specific EPA ID number.

The ID number is used on the shipping papers. If you do not have an ID number, call the Indianapolis IDEM office to obtain a Notification of Hazardous Waste Activity Form (Form 8700-12) and get an EPA ID number. (EPA ID numbers are

All SQGs and LQGs must notify IDEM of their hazardous waste generator activity.



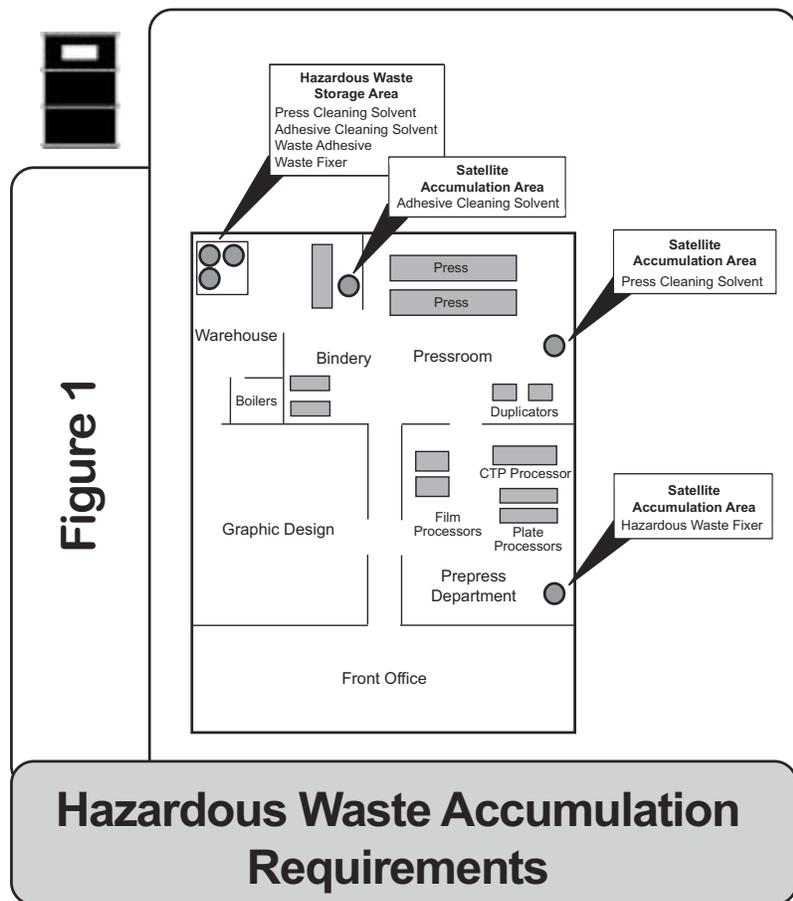
Important Tip

not required for CESQGs.) You should note that if you move your shop, you must notify IDEM to close out the old ID number and obtain a new EPA ID number for the new shop. Use Form 8700-12 for all EPA ID number changes.

## Satellite Accumulation of Hazardous Wastes

You can accumulate hazardous waste near the point of generation without triggering the Accumulation Start Date.

You are allowed to accumulate hazardous wastes in a Satellite Accumulation Area where it is generated, for example, the pressroom or prepress area. You are limited to one 55 gallon drum of hazardous waste for each waste stream (waste blanket wash, waste ink, etc.). Each drum or container must be labeled and kept closed when not in use. See Figure 1 below.



### Satellite Accumulation Area

- Locate drums close to the process. Containers must be compatible with their contents.
- Label drums accurately and keep drums closed and clean.
- When it is full, move the drum to your Hazardous Waste Storage Area within three days of filling. If you do not have a Hazardous Waste Storage Area then ship offsite within applicable time limits (page 26).

### Hazardous Waste Storage Area

- Label and date drum when the waste is first placed in the drum. (This is the Accumulation Start Date.)
- Keep drums closed, clean and in good condition.
- Whether the drum is full or not, ship offsite before the time limit or maximum quantity is reached.
- Inspect containers weekly for leaks and/or deterioration.

## Hazardous Waste Storage Area

You may also accumulate hazardous waste in an area remote from its generation.

You can also accumulate hazardous waste in another part of your shop remote from the point of generation. This area is called a Hazardous Waste Storage Area. This area is subject to more requirements than a Satellite Accumulation Area. See Figure 1.

The accumulation time and quantity of hazardous waste you can accumulate in a Hazardous Waste Storage Area are restricted by IDEM. The limits are based on your generator status as follows:

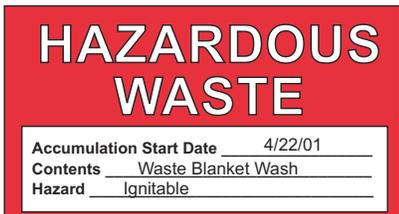
### Hazardous Waste Accumulation Limits

Large Quantity Generator (LQG)		90 days, no limit on quantity
Small Quantity Generator (SQG)		180 days (270 days if shipped more than 200 miles), maximum of 13,200 lbs or approximately 30 drums
Conditionally-Exempt Small Quantity Generator (CESQG)		maximum 2,200 lbs or approximately four drums

If you exceed the quantity limits, you must renotify IDEM and comply with the additional requirements of the next higher generator status (e.g., go from a CESQG to a SQG). As a LQG, if you accumulate wastes for more than 90 days, you need a special storage permit. Obtaining this permit is a costly and lengthy process and you should make every effort not to exceed the 90 days.

You may store your hazardous wastes outside and exposed to the elements, but it is recommended you store your wastes inside. Call IDEM for guidance on this issue.

## How Must I Label my Hazardous Waste?



Containers of hazardous waste must be labeled at all times.

Label each container or tank “Hazardous Waste”; the name of the waste (e.g., waste presswash, or use the proper DOT shipping name); and the hazard (whether it is ignitable, toxic or corrosive). The label should be prominently displayed, when you first put waste into the container/tank. It must be visible at all times. Be sure it does not get faded, weathered or obliterated. If it does, replace the label. Use the example label here, or the “EPA Yellow Label” generally used by transporters. Labels are available from label supply companies.



**Y**ou may also be required to mark certain hazardous wastes with a USDOT label at the time of shipment. The labels most likely to apply to printer wastes are: combustible, flammable or corrosive. These DOT labels are not required during waste accumulation, but they must be affixed to the container before shipment offsite.

## How Do I Handle my Used Shop Towels?

**You must handle your shop towels and disposable wipes in an environmentally sound manner.**



**T**here are two types of cleaning towels used by printers:



Disposable wipers that are shipped offsite as waste.



Reusable shop towels that are returned to a commercial laundry.

**N**onhazardous wipers may be disposed as solid waste. You must show that wipers contaminated with solvent and ink are nonhazardous – generally by testing for flash point and listed solvents and metals (such as the F-solvents and listed metals on page 104).

**A**s a general rule, if there is no free liquid solvent in the shop towel containers/drums used for accumulation, then the used shop towels can go to the laundry. Any solvent collected in the drum bottoms must be managed properly. If it has a flash point of less than 140°F or it is a F-listed solvent, then it is a hazardous waste and must be managed as such.

**A**ir drying is not allowed because it releases pollutants into the air. Therefore, you should make efforts to minimize excess solvent or ink on shop towels. You can gravity drain excess solvent in a drum with a false bottom to collect the solvent. When the shop towels are picked up, empty the excess solvent for reuse or proper disposal as hazardous waste. You can also mechanically or hand wring the towels to remove and collect the waste solvent for disposal.

**Y**ou must not use soiled shop towel containers for solvent waste disposal. Always store the soiled towels in

**Just Do P2!**

### Case Study

A midsize commercial printer purchased a small solvent recovery unit. Press operators were required to collect waste press cleaning solvent from ink trays, used solvent from plunger cans, and wring out saturated shop towels. The solvent was reclaimed and the printer was able to reduce their blanket wash use by almost 25%. They also reduced the amount of solvent on shop towels sent to the laundry.

**Waste Reduction Tip**

closed containers. You should train employees to use separate containers for solvent and ink disposal. Press operators should not use reusable shop towels to line ink trays. They should also scrape ink off press parts and ink fountains before cleaning with shop towels or disposable wipers.

## How Do I Ship my Hazardous Waste?

**If you are an SQG or LQG, you must use a registered hazardous waste transporter to remove your hazardous waste.**

Each shipment of hazardous waste must be accompanied by a uniform hazardous waste manifest. (Transporters may require CESQGs to use a manifest for shipping their wastes off-site, but the rules do not require CESQGs to use a manifest.) You may be able to obtain a manifest form from your transporter, broker, or Treatment, Storage, or Disposal Facility (TSDF). As of January 1, 2001, the Indiana manifest no longer exists. You are required to use the US EPA Uniform Hazardous Waste Manifest for shipments within Indiana or to another state that doesn't have its own manifest. If the other state has its own manifest, you are required to use that manifest. You should work with your transporter, broker, or TSDF to make sure you use the correct manifest.

You are responsible for sending the manifest copies to the appropriate destinations. Transporters and TSDFs may distribute the copies as a customer service. If, at the time of shipment, you are given more than one manifest copy (other than the generator copy as noted on the bottom of the manifest), then you must send the other manifest copy to the state receiving the wastes. As of January 1, 2001, you are no longer required to submit manifest copies to IDEM. See below on where to send the manifest copies. As a generator, you must always retain at least one copy of the manifest at the time of waste shipment.

- In-State Disposal Facility  Copy sent to generator as an acknowledgment of receipt.
- Out-of-State Disposal Facility  Copy sent to generator and, if required, to destination state as an acknowledgment of receipt.
- Generator  Copy sent to destination state, if required. (only for out-of-state shipments)

The TSDF receiving your hazardous waste will send you a facility-signed copy of the manifest. You should staple your original copy and the facility-signed copy together and place in a file. If you have not received your facility-signed copy of the manifest, you must take steps to investigate the whereabouts of the shipment and manifest and/or contact IDEM about the situation. If you are a LQG, after 35 days of the waste shipment, you must investigate the whereabouts of the shipment and manifest. LQGs

only: If you do not have your facility-signed copy of the manifest after 45 days of the waste shipment (ten additional days), you must write a letter to IDEM describing your efforts and include a photocopy of the manifest in question and request assistance. This letter to IDEM is called an Exception Report. If you are a SQG, you are only required to submit an Exception Report to IDEM after 60 days of the waste shipment. SQGs are not required to investigate the whereabouts of the shipment and manifest prior to submitting the Exception Report to IDEM.

**S**QGs and LQGs must also sign and keep a copy of the Landfill Disposal Restriction (LDR) Form. This is a form for hazardous waste treatment requirements. This form is not required for CESQGs. The LDR is only required one time with each waste stream. If the waste stream ever changes or you get a new waste stream, you must prepare a new LDR. You should also keep the LDR with the corresponding manifest(s) copies. Your transporter or vendor may be able to provide this form.

## **What If I Recycle Hazardous Waste in my Shop?**

**You can recycle hazardous waste for reuse in your shop.**

**Y**ou can recycle hazardous waste for reuse in your shop without an IDEM permit, unless it results in air emissions and may be subject to those permitting requirements. (See page 12.) Some types of recycling activities in print shops include: Silver Recovery Units (SRUs); recycling units that filter waste inks for reuse; and solvent reclamation systems. (SRUs directly connected to the processor and discharging to a sewer are exempt from hazardous waste permitting See page 46 for more information on wastewater discharge permits.)

**I**f you need guidance on waste recycling and permitting, contact IDEM's Office of Land Quality or CTAP. See contact information on page 113.

## **Emergency Response & Training for CESQGs**

**Hazardous waste emergency response procedures should be in place.**

**C**ESQGs are exempt from emergency response requirements for hazardous waste. However, they are strongly encouraged to have basic procedures in place. See next the section on SQG requirements.

**Y**ou should note OSHA also requires an Emergency Action Plan for addressing workplace emergencies (including those related to hazardous waste) in your shop. Under this requirement, you must also provide employee awareness training on basic emergency response and evacuation. See page 66 for more information.

## Emergency Response & Training For SQGs

SQGs are required to have emergency response procedures in place.

**S**QGs must have procedures in place to address emergency incidents relating to hazardous wastes. You must assign certain emergency response duties to an individual, the Emergency Coordinator. His/her duties include the following:



**Post the following information next to your shop's telephones:**

- The name and telephone number of your shop's Emergency Coordinator;
- The location of your spill control material, fire extinguisher(s), and, if present, fire alarm.
- The telephone number of the fire department (unless your shop has a direct alarm.)



**Ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their job responsibilities.**



**Respond to emergencies that arise by doing the following:**

- In the event of a spill, contain and cleanup the hazardous waste and any contaminated materials or soil as soon as practicable. See page 76 for more information on spills.
- In the event of a fire, call the fire department. You can put out small fires with a fire extinguisher, if you are trained.
- Immediately notify the Fire Chief when a release of hazardous waste creates a threat to public safety from fire or explosion. (This applies to all hazardous materials, see page 76.)
- In the event of a fire, explosion, or a release which could threaten human health outside of the shop, or when you have knowledge that a spill could reach any water body, you must immediately notify IDEM's Emergency Response Section at (317) 233-7745 or toll free at (888) 233-7745. IDEM will ask you several questions and help you notify downstream water users.

## Emergency Response & Employee Training for LQGs

LQGs must formally prepare for emergency incidents.

If you are an LQG, there are more requirements that you must follow for emergency response (written Contingency Plan) and document employee training. Call OLQ or CTAP for more information.

## Do I Need to File a USEPA Hazardous Waste Report?

There are two reports generators are required to submit to IDEM.

They are the Biennial Report, required by the US EPA, and the Manifest Summary Report, required by IDEM. The Biennial Report is a summary report of hazardous waste generation, on-site management and off-site shipments required by LQGs only. The Biennial Report is submitted by LQGs only to IDEM in March of every even-numbered (2000, 2002, etc.) year and covers the previous odd-numbered year's activity. If you have notified IDEM as being a LQG, you will automatically receive notice of the report being due and where to obtain the reporting forms and electronic report software.

As of January 1, 2001, LQGs and SQGs are required to complete and submit annually, in March, the Manifest Summary Report. The Manifest Summary Report is a compilation of the information found on your manifests from waste you shipped off-site in the previous year. The first report will be due March 1, 2002 and covers the previous year's shipments of hazardous waste. SQGs are required to submit this report annually to IDEM. Since LQGs are required to submit the Biennial Report every other year to IDEM, LQGs are only required to submit the Manifest Summary Report to IDEM the other years the Biennial Report is not due. The Manifest Summary Report forms will only be distributed to you the first reporting year. You will be required to keep the original forms and make copies of the forms as needed over the reporting years. New forms will not be sent out each year, but report forms will be available on the IDEM web site, [www.in.gov/idem/olq](http://www.in.gov/idem/olq).

The following is the reporting schedule for LQGs and SQGs:

March 1, 2002		LQGs Biennial Report and SQGs Manifest Summary Report
March 1, 2003		LQGs and SQGs Manifest Summary Report
March 1, 2004		LQGs Biennial Report and SQGs Manifest Summary Report
March 1, 2005 & thereafter		LQGs and SQGs Manifest Summary Report

## Summary of Generator Requirements

Generators must manage their hazardous waste according to their generator status.



Summary of Generator Requirements

	CESQGs	SQGs	LQGs
Determine whether your wastes are hazardous and accurately characterize each waste.	✓	✓	✓
Determine your hazardous waste generator status. Maintain records of quantity of waste generated monthly.	✓	✓	✓
Obtain your site-specific generator EPA ID number.		✓	✓
Accumulate your hazardous waste in accordance with Figure 1. <u>You must label all containers</u> (page 26).		✓	✓
Keep a record of where your hazardous waste is shipped. Keep the manifests and receipts on file for at least <u>three years</u> . Landfill Disposal Restriction (LDR) forms must be kept for <u>five years</u> (not required for CESQGs). <i>(It is recommended that the records be kept indefinitely.)</i>	✓	✓	✓
Accumulate no more than 220 gallons or 2,200 lbs (~4 drums).	✓		
Accumulate no more than <u>13,200 lbs</u> of hazardous waste in tanks or containers (~30 drums) at any time.		✓	
Ship hazardous waste offsite <u>within 180 days</u> of the accumulation date or <u>270 days</u> if sending > 200 miles offsite.		✓	
Prepare for emergencies and conduct employee training. See page 30.		✓	✓
Conduct weekly inspections of hazardous waste storage areas. <i>(It is strongly recommended that you maintain a log of the inspections.)</i>		✓	✓
Prepare a written Contingency and Training Plan as described on page 31. Document employee training.			✓
Ship hazardous waste offsite <u>within 90 days</u> of the accumulation date on the tank or container. There is no quantity limit.			✓
Prepare a Hazardous Waste Minimization Plan for each hazardous waste you generate.		✓	✓
Use a hazardous waste manifest for shipping hazardous waste.		✓	✓
Send a copy of manifests used to ship hazardous waste out-of-state to destination state, if state requires.		✓	✓
Submit Exception Report to IDEM if you do not receive your facility-signed manifest copy within 45 days for LQGs or 60 days for SQGs.		✓	✓

Continued on next page



Summary of Generator Requirements (cont.)

	CESQGs	SQGs	LQGs
Submit a Hazardous Waste Biennial Report by March 1 of every even numbered year to IDEM			✓
Submit a Manifest Summary Report by March 1 of every odd year to IDEM.			✓
Submit a Manifest Summary Report by March 1 every year to IDEM.		✓	



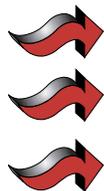
**Case Study**

A print shop reduced its press cleaning solvent wastes by using squirt bottles instead of rag plunger cans and diluting the blanket wash with water (approximately 10%). This resulted in lower blanket wash use, saving the printer 4-6 drums of blanket wash annually. The printer could also downgrade its LQG generator status to a SQG and reduced the shop's hazardous waste management requirements.

# Used Oil

Lubricating oils are used in presses, bindery equipment, building environment equipment (e.g., air conditioning units) and motor vehicles. From time to time, the equipment may require maintenance and oil changes. Oil leaks may occur or you may have a small oil spill that requires cleanup. Waste oil from these sources is regulated as used oil.

IDEM has requirements for used oil generators. You should do three things.



Manage the used oil properly at the site of generation.

Send the used oil offsite for appropriate recycling or energy recovery.

If disposed, determine if the used oil is hazardous.

Used oil that cannot be managed in this manner is regulated as hazardous waste, if it is a characteristic hazardous waste. See page 22. You must make a hazardous waste determination. If you determine that your used oil is not hazardous, it still cannot be sent to a solid waste landfill because most landfills do not accept liquid wastes or waste that contains free liquids.

## What is Used Oil?

Used oil is an oil product that has been used for its intended purpose and will no longer be used.

During normal use, impurities such as dirt, metal scrap, water, or other chemicals can get mixed in with the oil. After continual use, additives in the oil can break down or the oil loses its viscosity and lubricating properties. The oil no longer performs well and is replaced with new oil to do the job.

**Used oil** is any oil refined from crude oil or synthetic oil that has been used and can no longer be used for its original purpose, (i.e., it is contaminated with physical or chemical impurities).

**Recycling** means reconditioned onsite for reuse, re-refined at a refinery into comparable product for reuse.

**Energy Recovery** means the burning of used oil to generate heat or power.

**Fuel Blending** means used oils from different generators are mixed by an authorized facility into a usable fuel for industrial boilers.

**Oil-fired Space Heaters** are small onsite heating units of less than 0.5 MMBtu/hour capacity. These units must be vented directly outside the building.

**Ignitable Hazardous Waste** means a hazardous waste with a flash point below 140°F.

**Absorbent** means a material or article designed to soak up free liquid, such as oil leaks, for the purpose of disposal. It can be in the form of a granular material, pillows, pads, etc.

**Oily debris** means any material contaminated with oil, including absorbent, disposable wipers, soil, personal protective equipment, etc.



Important Definitions

## Sources of Used Oil

Used oil comes from a variety of sources in a print shop.

Here are some examples of used oil typically found in a print shop.

Press Oil	Transmission Fluid
Compressor Oil	Hydraulic Fluid
Engine Oil (vehicles /generators)	Machine Lubricating Oil

These used oils must be managed according to the requirements in this section. There may also be other sources of oil or oily wastes in your shop.

Oil wastes originating from virgin (unused) oil, oils used solely for their solvent properties, and animal and vegetable oils are not regulated as used oil. Oils that do not meet the definition of a used oil can still pose a threat to the environment if their disposal is mismanaged. IDEM strongly recommends that you collect and dispose of all used oils properly. Waste antifreeze, kerosene, and spent solvents contaminated with oil may be regulated as hazardous wastes because of ignitability or toxic metals. To minimize your liability, you should work with a licensed disposal facility to characterize the oily wastes to ensure proper disposal.

Used Oil	
<b>Generator Information</b>	
Company	Magenta Printing
Address	Indianapolis, IN
Source Used Press Oil	
Date	4/21/01

## Mixing Used Oil with Hazardous Waste

**Do not mix used oil with hazardous waste – this makes the mixture a hazardous waste.**

Used oil that is mixed with a IDEM-regulated listed or characteristic hazardous waste is subject to regulation under the hazardous waste rules. If you need additional guidance on this issue, contact your regional IDEM office. See page 113 for contact information.

## What About Oily Wastewater?

**Water contaminated with de minimis quantities of oil are excluded from the used oil rule when regulated by the Clean Water Act.**

The definition of de minimis quantities of oil is “... small spills, leaks, or drippings from pumps, machinery, pipes and other similar equipment during normal operations...”. You may be allowed to

discharge water contaminated with de minimis quantities of oil from routine cleaning activities to the municipal sewer. Most municipalities require you to obtain approval to discharge wastewater to the sewer. You cannot discharge any quantity of oil into stormwater drains or to the groundwater. See page 52. Any water contaminated with visible oil must be handled as used oil.

## How Do I Manage Used Oil in my Shop?

If you generate used oil, there are management standards that you must follow.

**T**hese management standards are common sense, good business practices that ensure the safe handling of used oil, promote recycling, and reduce the impact on the environment. These standards apply to all generators of used oil, regardless of quantity handled. You must follow these requirements to accumulate used oil.



**Label containers, fill pipes and tanks “Used Oil”.**



**Keep containers and tanks in good condition and closed to prevent spills and leaks. Ensure that the container or tank materials are compatible with the used oil. Do not store used oil near floor or storm drains.**

**I**DEM recommends that you do not accumulate used oil in large quantities because of possible spills and fire safety issues.

**T**hese standards relate to used oil leaks and spills.



**Keep equipment, containers and tanks in good condition and be careful when transferring the oil. Have absorbent materials available.**



**If you discover a spill or leak, stop the oil leak. If necessary, transfer the oil to another compatible container or tank.**



**Contain the spilled oil with absorbent or booms (e.g. pillows and pigs). Surround floor drains, storm drains, or other conveyances with absorbent or booms to prevent migration of oil.**



**Clean up the oil and recycle the used oil as you would have before it was spilled. (If recycling is not possible, you then must determine if it is classified as a hazardous waste to ensure proper disposal.)**



**Remove, repair or replace the defective container or tank. You may also be required to notify the IDEM. See page 76 for more information on spill reporting.**

**A**bsorbent booms or pigs are manufactured to absorb more than their weight in oil. That means free-flowing oil can be squeezed from them. As a rule of thumb, you should handle these spill control materials like used oil. Any other waste materials with free-flowing oil must be handled and disposed of as used oil.

**Y**ou can send oil-contaminated shop towels to a commercial laundry. The shop towels should be stored in closed containers. If free-flowing oil accumulates in the bottom of the container – collect in a separate container as used oil. Do not send it with the shop towels to the laundry. See page 27 for additional discussion on soiled shop towels.



**D**isposable wipers contaminated with oil are managed under the used oil rule. Make sure the disposable wipers are not contaminated with other wastes that are regulated as hazardous. If they are contaminated with hazardous wastes then they must be handled as such.

**A**

**T**he space heater must have a heat input capacity of less than 500,000 Btu/hr and must be vented to the outside. Call OAQ or CTAP for additional information.

## How Should I Manage Used Oil Filters?

There are management requirements for used oil filters.

**M**ost print shops do not generate used oil filters. However, if you do generate used oil filters, for example from company vehicle repair activities, you must do the following.



**Remove oil by puncturing the filter and anti-drain back valve.**



**Hot drain or gravity drain punctured filters for a minimum of 12 hours. Put drained oil in a separate drum labeled “Used Oil”. (*Crushing the filter in a commercially-available filter crusher is the best way to remove residual oil from the filters.*)**

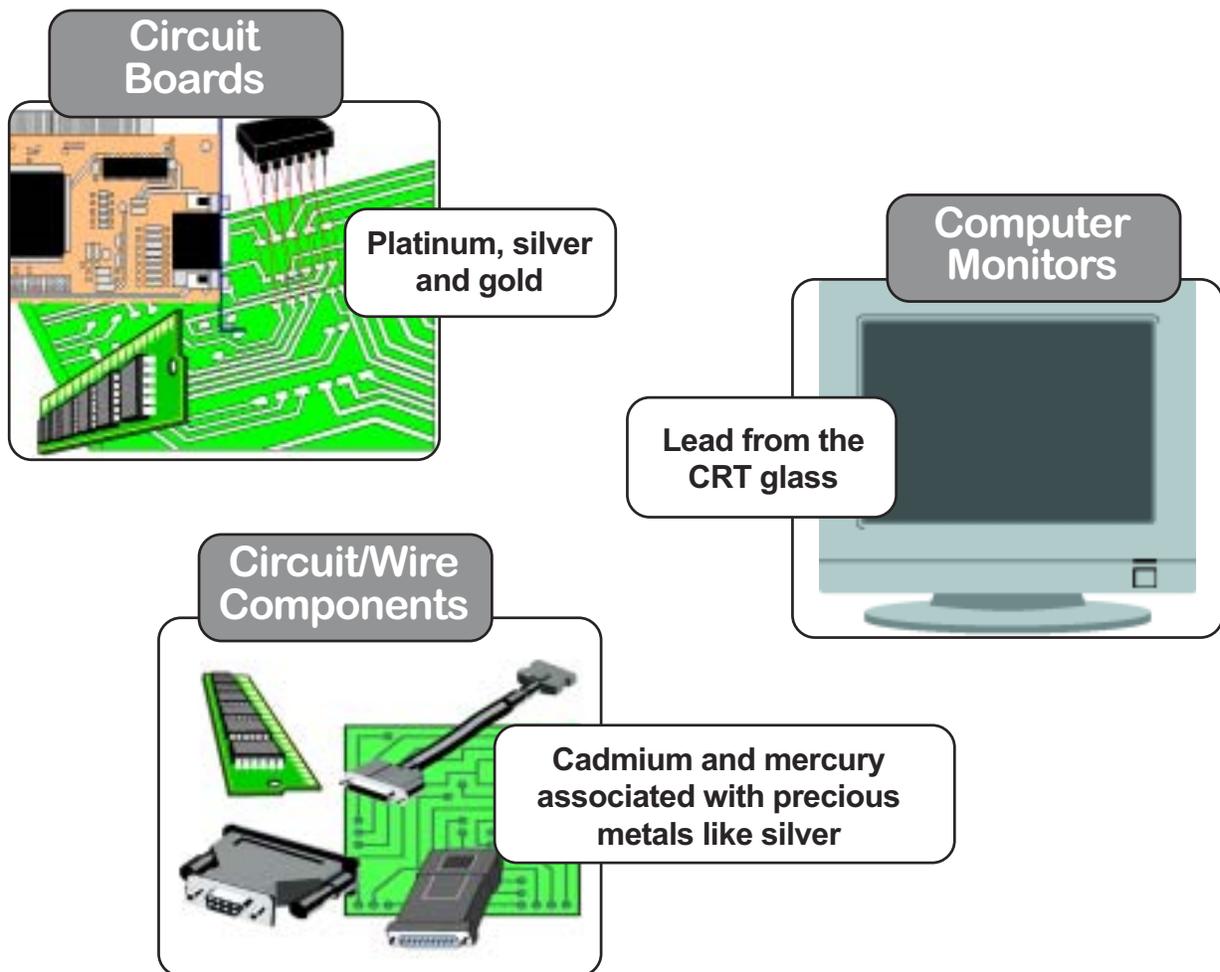
**W**e recommend that you keep drained filters in a separate container marked “Used Oil Filters”. (If possible, locate a scrap metal recycler who can recycle your filters. Otherwise these filters can be discarded as nonhazardous solid waste, if allowed by your landfill or solid waste hauler.)

**D**o not discard drained oil filters in your dumpster. Find a scrap metal recycler who can handle and properly recycle them.

# Discarded Electronics

The printing industry responds to a demanding prepress environment with rapidly changing electronic, digital, and telecommunication equipment. Computers are useful for only two to three years and obsolete equipment are becoming a major “waste stream” for printers.

Many electronic and computer components contain metals. If these components are not properly managed, these metals can be released into the environment from landfills and municipal incinerators. Here are some of the metals we find in electronic and computer equipment.



You have three options available to manage obsolete electronics and computers – reuse, recycling and disposal.

## First Try Reuse !

**Electronic and computer equipment that is functional, but obsolete, may be suitable for reuse.**

**C**ontact local schools, training institutions, or nonprofit organizations to find out the types of equipment they accept as donations. Some organizations may accept computers in need of repair. They will repair, consolidate, or reassemble the equipment for donation or sale to others.

**A**n on-line directory of organizations that facilitate donation of used computers to schools and community groups is available at the following Web site:

[http://www.microweb.com/pepsite/Recycle/recycle\\_index.html](http://www.microweb.com/pepsite/Recycle/recycle_index.html).



Companies that donate personal computers (less than two years old) to K-12 schools may qualify for an enhanced charitable deduction starting the 1998 calendar tax year. Check with your accountant or tax consultant.

Important Tip

## Then Try Recycling

**Equipment that does not work and cannot be cost effectively repaired or is so obsolete that it cannot be reused can be disassembled for the scrap value.**

**P**rinted circuit boards and wiring may contain recoverable quantities of precious metals, copper or aluminum. Frames and cases contain recyclable steel and plastic. (In fact, many computer manufacturers now use recycled plastic in their computer cases.) Monitors and CRTs made with leaded glass and shields can be recycled into new CRT glass or smelted for the recovery of lead.

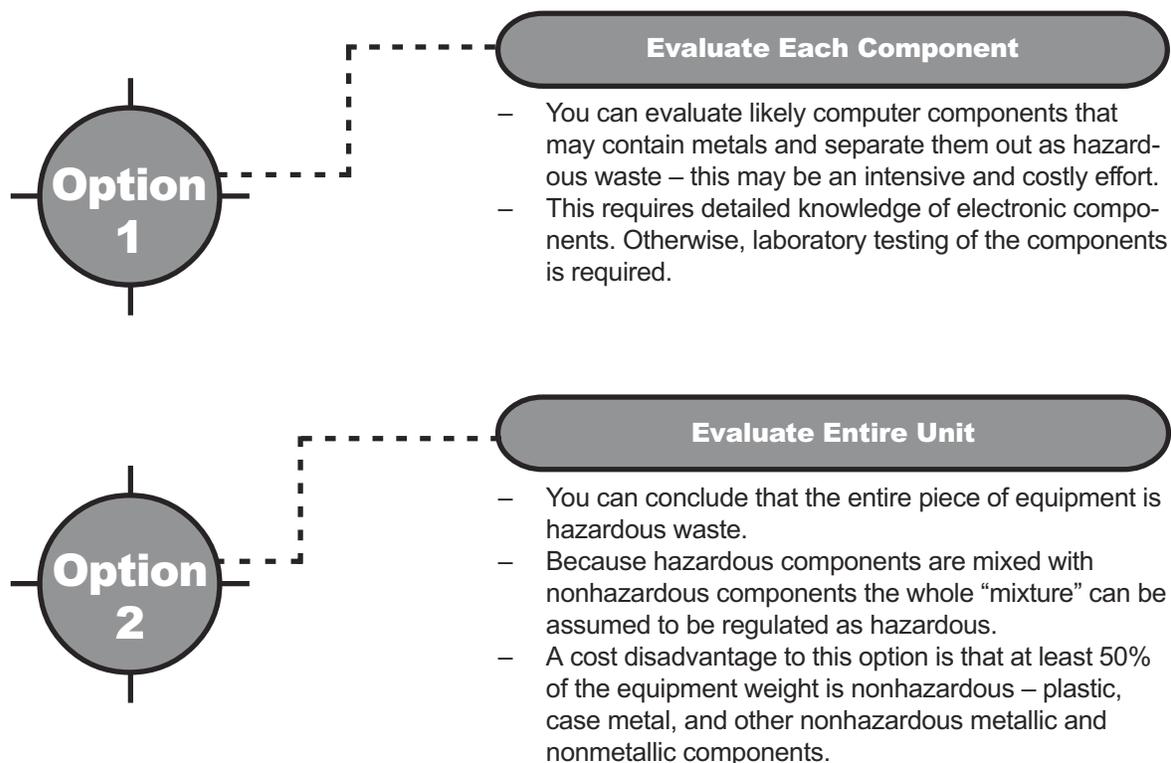
**U**nfortunately, these recycling options are not always available in your area or may not be cost effective. Few electronics recycling firms have been established at this time. To start, you can check EPA's Electronics Reuse and Recycling Directory (EPA530-B-97-001, January 1997) available at EPA's website. You may also find listings in the local phone directory or on the World Wide Web. For a web search, use keywords (like electronics, monitors or computers, and recycling) to find individual firms and on-line directories maintained by charity organizations and electronic or computer trade associations.



## How to Dispose

**Electronic and computer equipment contain metals that may exceed regulatory limits for hazardous wastes.**

**S**ome of electronic components may fail the Toxicity Characteristic Leaching Procedure (TCLP) Test for the hazardous waste metals (silver, mercury and cadmium). The burden is on you to make the determination. You have two options when you want to dispose of electronic and computer equipment.



**I**n either case, you will then have to follow the generator requirements for the management and disposal of hazardous wastes.

**T**o avoid the hazardous waste requirements, you should make every effort to reuse or recycle obsolete electronic and computer equipment. The long term costs and liabilities associated with reuse and recycling computer equipment will be significantly less than disposal.

# Universal Wastes

The hazardous waste rules ensure the proper management of hazardous wastes. Some commonly generated hazardous wastes, when properly recycled or disposed of, have little impact on the environment. To encourage environmentally sound recycling and disposal of these wastes, IDEM has reduced the regulatory burden on generators. Wastes subject to the reduced requirements are called universal wastes. One significant benefit of handling these wastes under the reduced requirements is that the wastes do not count toward the total amount of hazardous waste generated used to determine your hazardous waste generator status.

The regulations outline the requirements for Small and Large Handlers (generators) of universal wastes. In general, universal waste management standards for Small or Large Handlers are identical except for EPA notification, employee training and recordkeeping.

Universal Waste	
<b>Generator Information</b>	
Company	Magenta Printing
Address	Indianapolis, IN
Source	Waste Batteries
Date	4/21/01

## What are Universal Wastes?

There are four specific, but widely generated wastes – batteries, pesticides, thermostats and lamps.

Universal waste batteries include Ni-Cad batteries and small sealed lead-acid batteries. These batteries are typically found in electronic and computer equipment, mobile phones, and emergency backup lighting. Other commonly generated waste batteries, such as dry cell zinc-carbon and alkaline (“long life”) batteries, generally do not contain hazardous elements of concern and are not regulated as universal wastes. IDEM, however, encourages printers to manage the long life batteries along with universal waste batteries to divert them from incinerators and landfills.

Pesticides and mercury-containing thermostats are not typically found in the print shop. But if they are generated as a waste, they can be managed as universal waste.

Fluorescent lamps are the most common universal waste. Most fluorescent lamps contain a mercury powder lamp coating. (Manufacturers now offer lamps with low mercury powder coatings. Contact your supplier or the manufacturer for more information. Some of the new lamps may be exempt from hazardous waste regulation, which could reduce your disposal or recycling costs.)



## Universal Waste Exemption

The universal waste requirements do not apply to a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste.

If you do not generate more than 220 lbs of hazardous waste on a monthly basis, you are exempt from the requirements. IDEM recommends that you recycle, even if you are a CESQG, because it is environmentally-sound management practice. (See below.)

If you are a CESQG and elect not to follow the requirements, universal wastes (such as waste batteries, lamps and thermostats) can be discarded in the dumpster. However, your solid waste hauler must allow these wastes to be discarded in this manner. If your hauler does not accept them, you could find another hauler or voluntarily comply with the universal waste requirements.

## Summary of Universal Waste Management Requirements for Generators

Generators must manage their universal waste according to their handler status.

Summary of Generator Requirements	Small Quantity Handler (SQH)	Large Quantity Handler (LQH)
		
Accumulation limit for all universal wastes.	<11,000 lbs	≥11,000 lbs
Do not dispose, dilute or treat universal wastes. Do not mix with other hazardous wastes.	✓	✓
Notify EPA and obtain ID number.		✓
Keep batteries, thermostats and mercury-containing lamps in closed compatible containers.	✓	✓
Manage leakers and broken units as hazardous waste.	✓	✓
Mark each unit or container with the words “Universal Waste”, “Waste”, or “Used” and the waste material (mercury thermostats, mercury-containing lamps, batteries) . For example, “ Waste Batteries”.	✓	✓
Must train employees on proper universal waste handling procedures.	only inform	train and keep records
Do not accumulate for more than one year. Date containers when first filling them.	✓	✓
Generator must secure agreement with receiving facility to accept universal wastes.	✓	✓
Track offsite shipments to receiving facility.		✓

## How Do I Handle Large Lead-Acid Batteries?

If spent lead-acid batteries are recycled or reclaimed at a licensed facility, then you do not have to handle them as hazardous waste.

You may have Uninterruptible Power Supply (UPS) equipment for critical computer, telecommunications and production equipment. These systems are typically charged with large lead-acid batteries – similar to car batteries. These batteries are regulated under separate IDEM requirements, if sent offsite for reclamation.

Generators of large lead-acid batteries sent offsite for reclamation must do the following:



Use a licensed facility to recycle or reclaim the batteries.



Ensure that the battery cases are not damaged or leaking.

You should also do the following:



Accumulate batteries in an isolated area to prevent battery damage.



Maintain a record of the shipments made and the number of batteries sent to the reclamation facility.

## How Are Universal Wastes Transported?

You can transport universal wastes using a transporter or self-transport to another universal waste generator, transporter, or licensed reclamation facility.

Because universal waste shipments destined for reclamation at a licensed facility are not tracked by manifests, they do not have to meet the hazardous waste transport requirements. Whether you use a transporter (USDOT-registered with EPA ID number) or self-transport, you are required to meet all applicable requirements for hazardous materials under the USDOT regulations. Many SQHs and LQHs can arrange for offsite transport of universal wastes with their hazardous waste transporter.



If you self-transport, you will be required to research and comply with the applicable DOT requirements for each type of waste you ship. DOT has requirements on proper shipping containers, labeling, and vehicle placards. The waste must be shipped in a company vehicle. The driver must have a Commercial Driver's License. You should also investigate whether your business insurance will cover you in the event of an accident on the road. As the generator, you are liable for any environmental releases while enroute to a reclamation facility.

## How Do I Handle an Environmental Release of Universal Wastes?

**SQHs and LQHs must immediately clean up any universal waste spills or residues.**

If the components released are regulated as hazardous waste, then you must follow the requirements for hazardous waste disposal. You may also be required to notify IDEM, if the release exceeds any reporting thresholds. See page 76.

**S**ome components of universal wastes are not regulated as hazardous by themselves. For example, the aluminum end caps of fluorescent lamps are not hazardous. If any of these components are spilled or released, and they are not contaminated with hazardous components, then you can discard them as municipal solid waste.

# Water Quality

IDEM has regulations regarding the discharge of industrial wastewater to surface waters (streams, ponds, rivers, etc.), groundwater (i.e. septic systems), and municipal sewers. Your shop may generate industrial wastewater from several sources including: film and plate processing; spent fountain solution; equipment washing; and inks, coatings, adhesives and cleaning solutions. The discharge of the industrial wastewater represents a significant environmental issue. Printers who incorporate pollution prevention techniques into their prepress and pressroom operations can reduce the need for wastewater treatment and minimize environmental impact on water quality.



## City and Town Sewers

Local sewer authorities and IDEM regulate wastewater discharges.

You may discharge industrial wastewater to a city or town sewer system after receiving approval from the local sewer authority or IDEM. IDEM regulates the discharges of sewer treatment plants to local surface waters (e.g. rivers, etc.). In turn, the sewer authorities or treatment plants require, through local sewer ordinances, wastewater dischargers to comply with certain discharge limits and sewer use permits. These ordinances are also called, “pretreatment requirements for indirect dischargers”. (Indirect means the wastewater goes through a sewer system to a treatment plant and does not go directly to a river.)

Currently, 45 Indiana cities and towns have IDEM-delegated wastewater pretreatment programs in place. See list on page 118. They are the primary authority and issue wastewater discharge permits for their service area. However, there are local sewer districts who do not have pretreatment delegation. IDEM’s Office of Water Quality (OWQ) issues Industrial Wastewater Pretreatment Permits (IWPPs) to sewer dischargers in these areas.

## What are Typical Discharge Limits?

There are general discharge restrictions that apply to all printers.

Regardless of municipality or regional treatment plant, there are general restrictions on the types of wastewater that can be discharged to the sanitary sewer. These restrictions help prevent treatment

plant upsets and ensure proper sewage treatment. The restrictions that generally affect printers include:



**DO NOT** discharge flammable or combustible solutions (flash point less than 140°F) down the drain.



**DO NOT** discharge malodorous (e.g., rotten egg smell, etc.) wastewater.



**DO NOT** discharge any wastewater containing solids or viscous liquids (e.g., paper cuttings, adhesives, etc.) that may obstruct the flow in sewers.



**DO NOT** discharge wastewater with a pH less than 5.0 or higher than 10.5. (This pH range will vary according to sewer treatment plant requirements.)



**DO NOT** discharge excessive quantities of petroleum or mineral oils (e.g., lubricating oils, inks, etc.)



**DO NOT** discharge excessive metals, such as silver, copper and zinc.

**T**here may also be other discharge limits for organic and metal pollutants. The limits most likely to be of concern to a printer are: BOD<sub>5</sub>, COD, oil & grease, silver, copper, and zinc. You should contact your local sewer authority or treatment plant to find out what local limits apply to your wastewater discharge. If you already have a local sewer permit or IWPP, then the permit discharge limits apply.

## How Do I Get a Wastewater Discharge Permit?

**The first step is to determine if your local sewer authority is approved to issue discharge permits.**

**I**f you have industrial wastewater discharges, check the list of towns and cities (page 118) with approved wastewater pretreatment programs. If your town is listed, then contact them directly to obtain a permit. They will provide you with an application. You may be required to test your wastewater discharge and submit the results with the application. Once the application is submitted, the approval process usually takes about 60-90 days.



**S**mall printers who may have low volume discharges may be issued a permit exemption. However, the sewer authority can, at its discretion, require small shops to install silver recovery systems or comply with other local sewer ordinances in order to remain exempt.

**I**f your town is not on the list, you must obtain an Industrial Wastewater Pretreatment Permit (IWPP) from IDEM. Call IDEM's Office of Water Quality to obtain a permit application. See contact information on page 113. The permit process includes a technical review of the application, issuance of a draft permit, and public comment. IDEM generally issues final IWPPs within 60 days of submittal.

## What Type of Silver Recovery Should I Use?

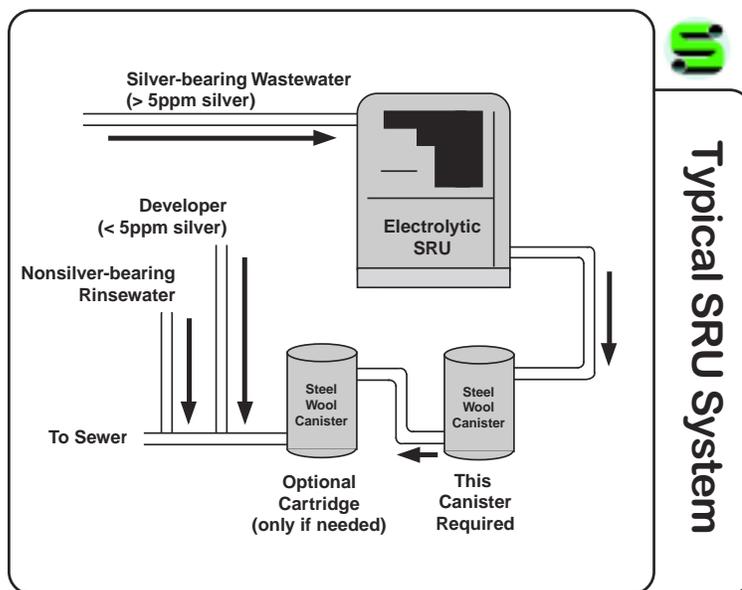
Photoprocessing wastewater can be discharged to the sewer,  
if you obtain approval from your local sewer authority.

You must remove as much silver from the wastewater in order to meet the discharge limit set by your local sewer ordinance, or your sewer use permit if you have one. Silver-bearing wastes include fixer, bleach-fix, stabilizers and PMT developers.

If you have a Silver Recovery Unit (SRU), it must be of adequate design and capacity for your volume of silver-bearing wastewater treated. To ensure adequate capacity, design the SRU system for peak flow periods and, if necessary, install a holding tank to meter the flow. SRUs should be maintained according to the manufacturer's specifications. We recommend that you keep a log for each SRU to ensure that SRU servicing and canister replacement is performed to ensure removal of the silver. (Your discharge permit may require additional recordkeeping.)

You can perform periodic sampling of the SRU discharge to ensure that the system is working properly. If you have a sewer use permit, the frequency, type and location of sampling are specified. There are two methods of silver testing. Silver estimating papers change color according to the amount of silver present. They are a low cost, quick check (but they cannot be used to determine permit compliance). If silver is present, then SRU servicing is required. We recommend that you have an analytical test done at least once a year, unless your permit requires more frequent testing. These tests generally cost \$15-\$20 each and are more accurate for determining compliance with your permit or local sewer ordinance. Make sure you check your permit, it may require more frequent testing and recordkeeping for silver and other parameters.

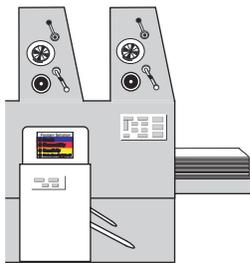
The most common SRUs are electrolytic, steel wool canisters and ion exchange units. If you have a low flow of silver-bearing wastewater, the electrolytic unit may not be needed. For example, a tabletop film processor may only need two silver canisters in series. The final SRU system design should be tailored to your silver discharge limit and processor flows. The lower the allowable limit, the more expensive and sophisticated the SRU system. When you purchase or lease a SRU, the supplier should guarantee it will meet your discharge limit.



## What Do I Do With my Fountain Solution?

Fountain solution can be discharged to a sewer under certain circumstances.

**F**ountain solution is a waterbased solution with additives that promote ink and water separation on the plates. These additives generally include organics like glycol ethers or alcohol, and inorganic compounds that act as buffering agents. The organic compounds are regulated as VOCs and are counted toward your shop's emissions because fountain solution evaporates off the substrate. However, printers will flush the press fountains or recirculating systems from time-to-time and replenish them with new solution.



**S**pent fountain solution generally has contaminants in trace concentrations. They include paper dust, ink particulates and trace metals. The trace metals come from contaminating ink pigments and the wear and tear of the press dampening rollers. They may include barium, copper, chromium and zinc. Most spent fountain solutions can be discharged to the sewer without violating local discharge limits. However, printers should obtain local sewer authority (or IDEM) approval for sewer discharge of fountain solution.

## What is a Wastewater Survey?

A Wastewater Survey is a form used to describe your wastewater discharge.

**Y**our local sewer authority or treatment plant may require you to complete a Wastewater Survey each year. Review the form carefully and reevaluate the volume and characteristics of the wastewater you discharge to ensure proper reporting. Some sewer authorities may also require annual wastewater analyses, if you are not already testing the wastewater as required by a permit. Generally, small printers do not have to perform wastewater analyses. The local sewer authority will usually accept an estimate of pollutant type and concentration in the wastewater discharge.

## How Can I Prevent Pollution and Reduce my Shop's Wastewater Discharge?

There are viable Pollution Prevention techniques that reduce wastewater.



**T**he following lists begins with low cost, common sense, best management practices that many printers have already implemented. P2 techniques are identified according to increasing capital, manhours and employee training.

**W**hile some techniques are more challenging to implement, they can

lower production costs, wastewater compliance costs, and increase your shop's competitiveness. They may be cost-effective strategies for you to consider, if you have not already. Contact PII or IDEM's CTAP, see 113 for more information.

This list is not all inclusive. It is provided to introduce many P2 techniques that have been successfully used by both small and large shops.

Prepress Operations	Small Shops	Midsize & Large Shops	Just Do P2!
For tray processing, use countercurrent washes. Reuse used rinsewater for the initial film wash and fresh water in the last rinse bath. When the last rinse bath needs changing, use it for the initial bath.	✓		Wastewater P2 Tips
Use floating lids on photochemical hand trays to maximize solution life.	✓		
Order photochemicals according to minimum inventory needed and date to ensure first-in-first-out usage.	✓	✓	
Substitute intensifiers, reducers and developers that do not contain mercury, cyanide salts and formaldehyde.	✓	✓	
Change processor baths when no longer effective rather than on a fixed schedule.	✓	✓	
Extend bath life by adding replenishers. Test with a gray scale.	✓	✓	
Substitute chromium-based system cleaners with products that are chromium-free or use a bleaching solution.	✓	✓	
Calibrate processors to manufacturer specifications to minimize overflow.	✓	✓	
Adjust or replace processor squeegees to minimize fixer and developer carryover, but still maintain film quality.	✓	✓	
Ensure that the processor only discharges overflow in the processing mode. Some processors are designed to overflow in standby mode.	✓	✓	
Install recirculators for developer, fixer and/or rinsewater. Rinsewater accounts for most of the wastewater discharged by processors.	✓	✓	
	<b>Case Study</b> A small print shop installed a rinsewater recirculator on its only film processor. The recirculation unit cost \$1,200 installed. By tuning up the processor to minimize developer and fixer carryover and recirculating the rinsewater, the printer saved almost \$500 in water and photochemicals costs annually.		

Just Do P2!

More Wastewater P2 Tips

	Small Shops	Midsize & Large Shops
<b>Prepress Operations (cont.)</b>		
Use rinse bath agitators.	✓	✓
Use countercurrent rinsing processors.	✓	✓
Evaluate silver-free films such as diazo, vesicular, photopolymer or selenium-based.		✓
Use dry positive proofs or aqueous developed proofs.	✓	✓
Use digital proofers for low and mid-quality jobs.	✓	✓
Use subtractive plates instead of additive plates.	✓	✓
Change processing solutions based on plate counts.	✓	✓
Use laser printed, waterbased direct-to-plate or digital prepress systems to eliminate the use of film/plate processing.		✓
<b>Press Operations</b>		
Perform routine maintenance on the clean dampening system.	✓	✓
Use alcohol substitutes in the fountain solution.	✓	✓
When alcohol is used, use chillers to minimize alcohol evaporation and extend solution life.	✓	✓
Use filter bags to remove paper dust and ink particulates in the fountain solution recirculation tank.	✓	✓
Cover fountain solution tank to minimize contamination with paper dust and dirt and minimize evaporation.	✓	✓
Minimize volume of fountain solution “dumps” by running the solution as low as possible in the recirculation tank before discharge.	✓	
Monitor water conductivity and pH of fountain solution.	✓	✓
Install pretreatment system (e.g., reverse osmosis) to condition water for fountain solution.		✓

Just Do P2!

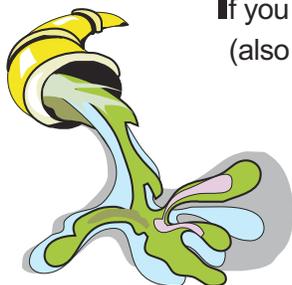
**Case Studies**

A print shop used alcohol-based fountain solution in its older two-color presses and envelope printing presses. It cost the printer approximately \$1,000 a year for alcohol. Over a three month period, alternate solutions were tested first on lower quality jobs before using promising candidates on the more critical jobs. The printer was able to completely eliminate the alcohol with minimal disruption in production or print quality.

A printer was subject to a low silver discharge limit. In order to comply, the printer first rebuilt and fine tuned its two film processors. Then fixer and rinsewater recirculators were installed with silver recovery. Additional silver tailing units were added to treat any tank “dumps” and residual overflow. Cost to the printer – \$4,000 installed. But the printer saved approximately \$2,000 annually on film, wastewater disposal costs and reduced photochemical use. The conversion also extended the operating life of the processors.

## Wastewater Discharges to Surface Waters

**IDEM and EPA regulate discharges of wastewater to any surface water, such as wetlands, rivers, streams or lakes.**



**I**f you discharge to surface waters, you are required to obtain a discharge permit (also called a National Pollutant Discharge Elimination System or NPDES permit), regardless of the volume or characteristics of the wastewater. In addition, the wastewater may have to be treated before discharge, and you will be subject to extensive wastewater monitoring and reporting requirements.

**I**f you have no other option for wastewater disposal, you must submit an application to IDEM to obtain a permit before discharging to surface waters. The application and approval process is lengthy and resource intensive. You may want to seek a consultant with expertise in NPDES permits. Only the largest printers consider surface water discharges.

**Y**ou should seriously consider all options before discharging to surface waters. For more information, call the Office of Water Quality at IDEM. See page 113 for contact information.

## Septic Systems

**You are not allowed to discharge any industrial wastewater to a septic system.**

**Y**ou can discharge sanitary wastewater to an onsite septic system. Septic systems do not provide adequate treatment of industrial wastewater.

**I**f you have a septic system, you are required to ship your film and plate wastewater, waste fountain solution and any other process waste streams offsite for treatment. If the industrial wastewater is not regulated as hazardous (page 22), you may be able to use a septage hauler that collects septage/wastewater for disposal at a wastewater treatment plant. If you cannot find a septage hauler, you can ship it offsite as nonhazardous industrial wastewater to a state-approved treatment/disposal facility.

## Stormwater Discharges

**Contaminated stormwater runoff has a significant environmental impact.**

**I**DEM has regulations for the management and permitting of stormwater discharges. For printers, two conditions must exist before a stormwater discharge



permit is required. First, stormwater and/or melting snow must come into contact with chemicals or materials that can contaminate it. Second, the stormwater or melted snow is discharged to surface waters such as wetlands, rivers, streams or lakes. (This also includes stormwater indirectly discharged to surface waters via a municipal sewer system.)

**Y**ou do not need a stormwater discharge permit for the following discharges:

-  Sprinkler system flushing
-  Uncontaminated air conditioning condensate
-  Lawn sprinklers
-  Covered loading docks
-  Covered or sealed trailers used for recycled paper collection

**H**ere are sources found at print shops that generally require a stormwater discharge permit.

-  **Outside storage of chemicals and empty containers**
-  **Uncovered aboveground storage tanks (or without secondary containment)**
-  **Uncovered ink fill pipe connections**
-  **Outside fuel dispensing operations**
-  **Onsite fleet vehicle maintenance shops**
-  **Contaminated or oil soaked pallets stored outside**
-  **Open compactors or dumpsters (no lids or overhang roofs) that are used for empty chemical container disposal**
-  **Uncovered loading dock platforms**

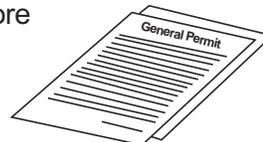
**T**here are three options, if you have outside activities and discharge stormwater to surface waters.

- Option 1** Relocate materials and/or activities inside.
- Option 2** Build shelters around or roofs over materials and/or activities conducted outside.
- Option 3** Continue your activities and obtain a stormwater discharge permit.

## How Do I Get a Stormwater Permit?

There are two types of stormwater permits available to printers – general and individual permits.

The general permit is a simplified permit for general industry (including printers). It typically does not require stormwater testing and allows the printer to use Best Management Practices (BMPs) to minimize stormwater contamination. The individual permit is a more comprehensive permit for complex facilities. Only the large printers should consider an individual permit. However, all printers with outside activities and discharging stormwater are required to have at least a general permit.



To obtain a general permit, you must submit a Notice of Intent (NOI) to the Office of Water Quality at IDEM. If you need an individual permit, you must complete a more comprehensive application (Form 1) and conduct stormwater testing. The NOI and Form 1 are available from IDEM. See page 113 for contact information.

## General Stormwater Pollution

### Prevention Plan

Printers with a general stormwater permit must prepare and implement a Storm Water Pollution Prevention Plan (SWP3).

The SWP3 is intended to help printers identify activities and industrial areas which contribute to stormwater contamination and where BMPs (Best Management Practices) need to be established. In preparing this plan, you should design it to minimize future revisions. Put equipment lists, phone numbers, and site plans, etc. on separate pages for easy updating. You must review the plan by January 28th annually to make sure it is current. Plan revisions are also required when equipment/procedures change or if you implement the plan and any of the procedures are inadequate. The plan must be fully implemented within one year of obtaining your general permit.

For printers, the use of BMPs provides several benefits in place of traditional engineering controls to prevent contamination of stormwater discharges. Here are some of the common BMPs for printers.

## Stormwater – Best Management Practices for Printers

<b>Plates &amp; Film</b>	Store inside on pallets or drums before pickups.
<b>Pallets</b>	Do not accumulate. Reuse or discard immediately. If possible, store inside.

## Stormwater – Best Management Practices for Printers (cont.)

<b>Storage Tanks</b>	Locate ink, fuel oil and solvent tanks inside. Ensure that fill pipes are covered with drip trays. If located outside, use double-wall tanks or cover with roofs.
<b>Empty Drums &amp; Containers</b>	Do not store on loading dock platforms. Store inside.
<b>Dumpsters &amp; Compactors</b>	Use lids or cover with shelters.
<b>Loading and Unloading Chemicals</b>	Do not unload or load during rainstorms. Do not store containers on loading docks.
<b>Outside Spills</b>	Clean up spills immediately.
<b>Vehicle Fueling Operations</b>	Cover dispensers and install grooved pavement.
<b>Fleet Vehicle Washing</b>	User only pressurized water or use an offsite washing service.
<b>Fleet Maintenance</b>	Perform fleet maintenance activities inside. Do not store parts outside. Install storm drains inside garage connecting to an oil-water separator. Protect floor drains from spills.

### What if I am Exempt from a Stormwater Permit?

You must complete and submit a “No Exposure Storm Water Certification”.

The No Exposure Storm Water Certification form is a two-page fill-in-the-blank form. The form is available from IDEM’s Office of Water Quality or the IDEM website at:

<http://www.in.gov/idem/owm/appforms.html>

You will need to provide your shop’s latitude and longitude and other basic company information on Page 1. On Page 2, you will certify to having no outside operations potentially contaminating stormwater. The form is sent to the IDEM’s Office of Water Quality, Permits & Compliance Branch. See page 113 for resources. Keep a copy of the form on file. Submittal of this form will be required every five years.

# Workplace Safety

The Federal Occupational Safety & Health Administration (OSHA) recognizes that workplace safety programs are a key element in preventing injuries. Many printers have some management procedures that address employee health protection and injury prevention. Although printers may find it time consuming to develop and implement a Safety & Health (S&H) Program, OSHA has consistently shown that shops with good S&H Programs are more productive, have higher employee morale, and low worker compensation costs.

In this chapter, you will be provided with the basics on how to develop and implement a S&H Program. You will also have an opportunity to find out what you can do to prevent the ten most common OSHA violations in the printing and publishing industry. Each violation will be described and practical solutions provided to help you maintain a safe shop.

Printers should also be aware that OSHA regulations may not apply to all their printing operations. If there is no specific OSHA standard for the hazard, OSHA still has the authority to enforce printers to correct recognized hazards in their shops. The Occupational Safety & Health Act of 1970 has a “General Duty Clause”, which provides that:

“Each employer ... **shall** furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.”

This means you must make a sincere effort to review, and then correct, possible and known hazards in your shop, regardless of whether an OSHA standard applies. Read the following example to see how Indiana OSHA (IOSHA) could use an employee complaint to inspect a print shop, resulting in a violation of the General Duty Clause.



A speciality book printer has 10 employees working in the bindery department. Over the past two years, four employees have suffered from injuries in the wrists and shoulders. An employee complaint is filed, but management makes little effort to address the employee’s concerns. A complaint is then filed with IOSHA. IOSHA visits the shop, reviews the OSHA 200 Logs (summary logs for workplace recording injuries and illnesses) and inspects the bindery operation. IOSHA concludes that the frequency of injuries are excessive compared to the number of department employees. The printer is cited for violating the General Duty Clause because employees are required to perform excessive lifting, twisting and repetitive activities that could be avoided. The printer must pay a penalty and install ergonomic workstations to prevent future repetitive stress injuries.



General Duty Example

Indiana OSHA (IOSHA) of the Indiana Department of Labor enforces federal OSHA’s workplace safety regulations. There are also fire safety requirements enforced by the Indiana Department of Fire & Building Services (DFBS). (See the next chapter for more information on fire safety.) This chapter provides you with the basic workplace safety requirements. Each print shop is unique and additional requirements may apply.

## How Do I Develop a Safety & Health Program?

**Printers should endorse and actively support health protection and injury prevention in their shops. A written plan can help.**

Midsize and large printers should have a formal S&H Program because of the numerous OSHA requirements that apply to larger shops. But even small shops should have a basic S&H Program in place. S&H Programs should include the following aspects:



**Management Leadership and Employee Participation**



**Hazard Identification, Prevention and Corrective Action**



**Accident Investigation**



**Emergency Response**



**Employee Training and Recordkeeping**



S&H Plan - Table of Contents

- Section 1 - Company Safety Policy
- Section 2 - Management and Employee Participation  
Personnel Responsibilities and Safety Team  
Accountability and Review Procedures
- Section 4 - Hazard Identification and Corrective Action  
Brief Summary of Hazards  
Self-Inspection Checklist  
Ways to Reduce Hazards  
Corrective Action Procedures
- Section 5 -Accident Investigation  
Periodic Analysis of Injury & Illness Trends  
How to Investigate an Accident
- Section 6 - Emergency Response  
Procedures and Equipment  
Equipment Inspections
- Section 7 - Employee Training  
Initial/Refresher Training Topics and Schedule
- Appendices  
Shop Safety Inspection Checklist  
List of Safety Team Members

A written plan allows for a more comprehensive look at your shop and how you can improve safety. Using the key program aspects above, you can prepare a written S&H Plan that can be used for reference and employee training. When the S&H Plan is complete, its implementation will take time. You may need to change work practices and conduct employee training.

Start with improving safety awareness first and then incrementally change work practices. Employee involvement is crucial

for success. Involve them in implementing the changes. Continued management commitment and visible support must also be followed by enforcement of new procedures. It may be a difficult task, but well worth it in the long run.

Visit the OSHA website ([www.osha.gov](http://www.osha.gov)) to get more information on Voluntary S&H Programs. OSHA provides an easy to read policy document on how to set up a program on their Library page.

## The Ten Most Common OSHA Violations Found in a Print Shop

There are over 1,000 pages of OSHA regulations enforced by IOSHA – many of those regulations apply to printers.

These regulations can be divided into certain major rules. The most commonly known rules include Hazard Communication (HazCom); Lockout/Tagout; Electrical, Fire Protection and Personal Protection Equipment (PPE). Naturally, these rules consist of numerous requirements that make up the most frequent violations found in print shops. Printers are required to comply with these requirements or face significant penalties for noncompliance.



Here are the most common ten OSHA violations.

- #1 Inadequate or lack of a Hazard Communication Program (1910.1200).
- #2 Inadequate or lack of a Lockout/Tagout Program (1910.147).
- #3 Inadequate or lack of machine guards exposing points of operation or rotating parts. (1910.212)
- #4 Inadequate or lack of guards on power transmission equipment exposing belts, gears, flywheels, etc. (1910.219)
- #5 Inappropriate or the lack of Personal Protective Equipment (1910.132).
- #6 Improper storage of flammable/combustible liquids (1910.106).
- #7 No annual maintenance check of fire extinguishers. (1910.157)
- #8 Blocked or inadequate fire exits. (1910.35 - 1910.38).
- #9 Uncovered, live electrical components. Combustible storage within three feet of electrical panels. (1910.301 - 1910.306)
- #10 Improper or lack of electrical grounds for metal-enclosed equipment (1910.304).

# # 1 - Hazard Communication

## What You Must Do



Prepare a written HazCom Plan.



Label all containers reservoirs and tanks with the product name, primary hazards (flammable, corrosive, etc.) and the target organs (eyes, skin, lungs, etc.). *Exception: containers used by one person and emptied at least daily, consumer products, supplier containers with the same information.*



Keep Material Safety Data Sheets (MSDSs) for all chemicals in your shop. Even if you stop using the product, you must keep the MSDS for 30 years.



Keep a Chemical Product List (a list of MSDSs on file) with the written HazCom Plan.



Train your employees. Required subjects: employee rights; labels; how to read a MSDS; basic chemical hazards; basic emergency response, and proper work procedures (including nonroutine tasks). Document the training.

Blanket Wash	
①	Health
②	Flammability
③	Reactivity
ⓑ	Protective Equipment

# # 2 - Lockout/Tagout

## What You Must Do



Prepare a written Lockout/Tagout Plan. You can find a boilerplate plan at the OSHA website, click on the Regulation button and look for 1910.147 – The Control of Hazardous Energy (Lockout/Tagout), Appendix A. Call PII for assistance.



Compile a table of all equipment subject to lockout. You do not have to include plug & cord equipment that remains under the control of the person performing the service. Make sure you identify in the table the specific lockout source (e.g., Panel RH-1, Breaker 33). If you cannot lock or tag out in one step, you must write a specific procedure for equipment like a press or binding line. (*Don't forget to include building service equipment (e.g., air handling equipment, furnaces, humidifiers, water heaters).*)



Provide locks and tags to authorized employees.



Employees authorized to perform lockout must be trained in the procedures specific to the equipment for which they are responsible. Employees not authorized (also known as affected employees) must still be trained in how the locks/tags are used and not to attempt to restart locked/tagged equipment.



On an annual basis review and certify the lockout procedures in the Plan. Review the procedures with each authorized employee. Document this effort.

## # 3 - Machine Guards

### What You Must Do



Guard all ingoing nip points, slitters, guillotine cutters, rotating gears, and any other point of operation where an employee can get caught or cut. Don't forget to guard machine shop tools, table saws, drill presses, lathes, etc.



The machine guard rule applies to all equipment, regardless of age. There is no grandfather clause for old or used equipment without proper guards.



Abrasive wheel grinders must have wheel guards and work rests. The work rests must be within 1/8 inch of the wheel, and unguarded wheel exposure must not exceed 90°.

## # 4 - Power Transmission

### What You Must Do



Guard all rotating gears, pulleys, belt/chain drives and drive shafts below seven feet. It is strongly recommended that power transmission equipment be guarded to a height when no employee can reach it.



This rule applies to all equipment, regardless of age. Again, there is no grandfather clause for old or used equipment without proper guards.

## # 5 - Personal Protective Equipment (PPE)

### What You Must Do



Conduct a PPE Hazard Assessment for each department. Determine the need for PPE (respirators, hearing protection, footwear, gloves, aprons, eye protection) according to job task. Document and sign the Hazard Assessment.



Provide the PPE. Conduct and document employee training in PPE use and care.

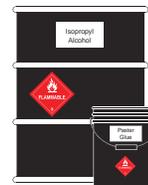


Ensure that employees wear and take care of PPE. As the employer, you are responsible for the proper care and use of all PPE worn by employees, including PPE (e.g., prescription safety glasses, shoes, respirators, etc.) brought in your shop by employees for their own comfort.



When operations change and new PPE is required, then redo the Hazard Assessment and retrain employees.

## # 6 - Flammable & Combustible Liquids



### What You Must Do



Many film cleaners, inks, press cleaning solvents and some adhesives and coatings are considered flammable or combustible. Always use approved, closable containers for their storage. Don't use coffee cans, wax paper cups or ice cream containers!



Store welding gases, inks and solvents away from ignition sources, such as electrical panels, and high voltage equipment.

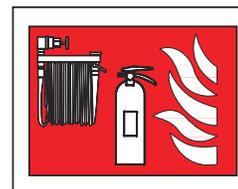


Ensure that each container is properly labeled per the HazCom Standard.



If the liquid has a flash point of 100°F or less, it must be properly grounded. Check with your local Fire Marshal on how to do this.

## # 7 - Fire Extinguishers



### What You Must Do



Install fire extinguishers within 25 feet of flammable/combustible storage areas and 75 feet for other nonproduction areas.



Ensure that fire extinguishers are certified usable and tagged every 12 months. *(This is generally performed by fire equipment supplier.)*



Don't block access to fire extinguishers, fire hoses, and alarms. Conduct monthly visual inspections. It is recommended that you provide a three foot buffer area around them.



Employees who use fire extinguishers must be trained annually. Keep training records.

## # 8 - Means of Egress



### What You Must Do



Don't lock exit doors at anytime.



Doors that may be mistaken for an exit must be identified as "Not an Exit" or the name of the room.



Keep aisles leading to exit doors clear and at least 28 in. wide.



Ensure that exit signs and emergency lights are working. Perform periodic building surveys to test lights and signs.

## # 9 - Electrical System Design



### What You Must Do

- Make sure all live electrical components in electrical panels are covered. Use knockout covers, breaker blanks, and metal inserts. Do not use tape, plastic or cardboard.
- Keep electrical panels clear with a three foot buffer zone. For over-600 volt panels, use four feet.

## # 10 - Electrical Wiring & Equipment



### What You Must Do

- Ensure that all power cords are insulated with no bare wires. Look at plugs where the power cord has pulled from the plug and wires show. Repair or replace as needed.
- Don't use electrical tape to repair torn wires; it is not considered a permanent fix. Shorten or replace the wire.
- Ensure that equipment with metal enclosures are properly grounded. (This includes consumer fans, coffee machines and portable heaters used in your shop.)
- Ensure that all portable lamps, vending machines and refrigerators are also grounded.
- Ensure that lamp fixtures below eight feet do not have exposed electrical components.
- Identify and mark equipment disconnects, panels and breakers as to their purpose.
- Replace broken or missing outlet faceplates.

## Other Common Violations - General



### What You Must Do

- Use safety glasses when cleaning with compressed air. Reduce the pressure to 30 psi or less. Also use nozzle tips that prevent back pressure buildup if the nozzle clogs.
- Ensure that all storage mezzanines have top and mid rails and toeboards. They must also be posted with a floor loading sign (e.g., 150 lbs/ft<sup>2</sup> maximum load).
- Keep the OSHA 300 log current within six days of the last recordable injury. Post it during the months February, March and April. Keep the logs for at least five years. The OSHA 300 log is not required for print shops with 10 or fewer employees.



## Other Common Violations - Noise

### What You Must Do



Document annual hearing tests offered to employees exposed to the noise levels in your shop (or a particular shop department) exceeding 85 dB (on the A scale) averaged over an 8-hour period or an equivalent 50% dose. *(Shop noise levels should be determined by a qualified technician with calibrated noise measuring equipment.)*



Install engineering controls or provide, and ensure proper use of, two types of hearing protection if the noise levels exceed 90 dB average over an 8-hour period. The engineering controls or hearing protection must reduce the employee's exposure to noise below the 90 dB threshold.



Conduct and document annual hearing conservation training for employees exposed to noise in excess of the 85 dB threshold.



Post the warning signs and the OSHA noise rule in the area where hearing protection is required.

## Emergency Action and Fire Prevention Plans

**You are required to have a written Emergency Action Plan and Fire Prevention Plan.**

**A**s a shop owner or manager, you are required to prepare for emergencies. This entails a thorough review of your operations and development of basic emergency response procedures. These procedures are outlined in the Emergency Action and Fire Prevention Plans. For shops with less than 10 employees, the plans/procedures can be conveyed to employees verbally.

**T**he Emergency Action Plan is a set of procedures to safely shut down operations, evacuate employees and handle medical emergencies. The Fire Prevention Plan consists of procedures to minimize fire safety hazards and respond to a fire. See page 66 for more information on these plans.

## The Benefits of Self-Inspections

**Perform a monthly or quarterly self-inspection. It will make hazard identification and corrective action easier when you see an inspector.**

**I**t takes time to get started, but once the S&H Program is in place, you will find that it is much easier to maintain it. By conducting periodic self-inspections, you will be able to identify and correct problems before they cause an accident or become a violation. To help you, see page 87 for a self-inspection checklist you can use in your shop.

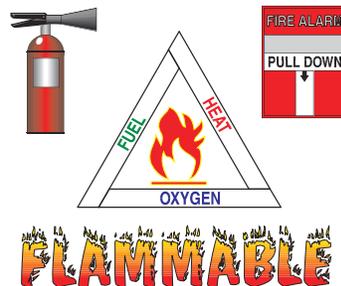
# Fire Safety

The printing industry uses a diverse group of chemicals that may be combustible and/or flammable. This means that a more cautious approach in storage, handling and use is required to minimize fires and spills.

Although no one can implement fire safety practices that are fail-safe, there are some work practices that can reduce fire hazards.

This chapter looks at chemical handling and storage as it related to fire safety in your shop. Both IOSHA and the Indiana Department of Fire & Building Services (DFBS) have regulations for the storage and use of flammable and combustible materials. In addition, there is the Flammable and Combustible Liquids Code – NFPA 30 (among other standards on specific fire safety issues), published by the National Fire Protection Association (NFPA). The NFPA standards establish minimum standards of fire safety that may be referenced or used by state and local agencies.

As a shop owner, you are required to comply with applicable state and local fire safety regulations. This chapter will assist you in identifying basic fire safety hazards and the actions you can take to fix them. Contact IOSHA, DFBS, or your local fire department for more information. See page 113 for contact information.



**Flash Point** means the minimum temperature at which a liquid gives off sufficient vapor to ignite near the liquid surface.

**Flammable Liquid** means any liquid with a flash point below 100°F. There are three types of flammable liquids.

**CLASS 1A** – Flash point below 73°F and a boiling point below 100°F.

**CLASS 1B** – Flash point below 73°F and a boiling point at or above 100°F.

**CLASS 1C** – Flash point between 73°F and 100°F.

**Combustible Liquid** – means any liquid with a flash point above 100°F. There are three

types of combustible liquids.

**Class II** Flash point above 100°F and below 140°F

**Class IIA** Flash point at or above 140°F and below 200°F.

**Class IIIB** Flash point at or above 200°F.

**Fire Area** means a building area protected by two-hour fire walls and one-hour fire doors.

**NFPA** means the National Fire Protection Association.

**Safety Can** means an approved container of not more than five gallons capacity with a spring-closing lid or spout cover and flame arrestor designed to minimize fires.

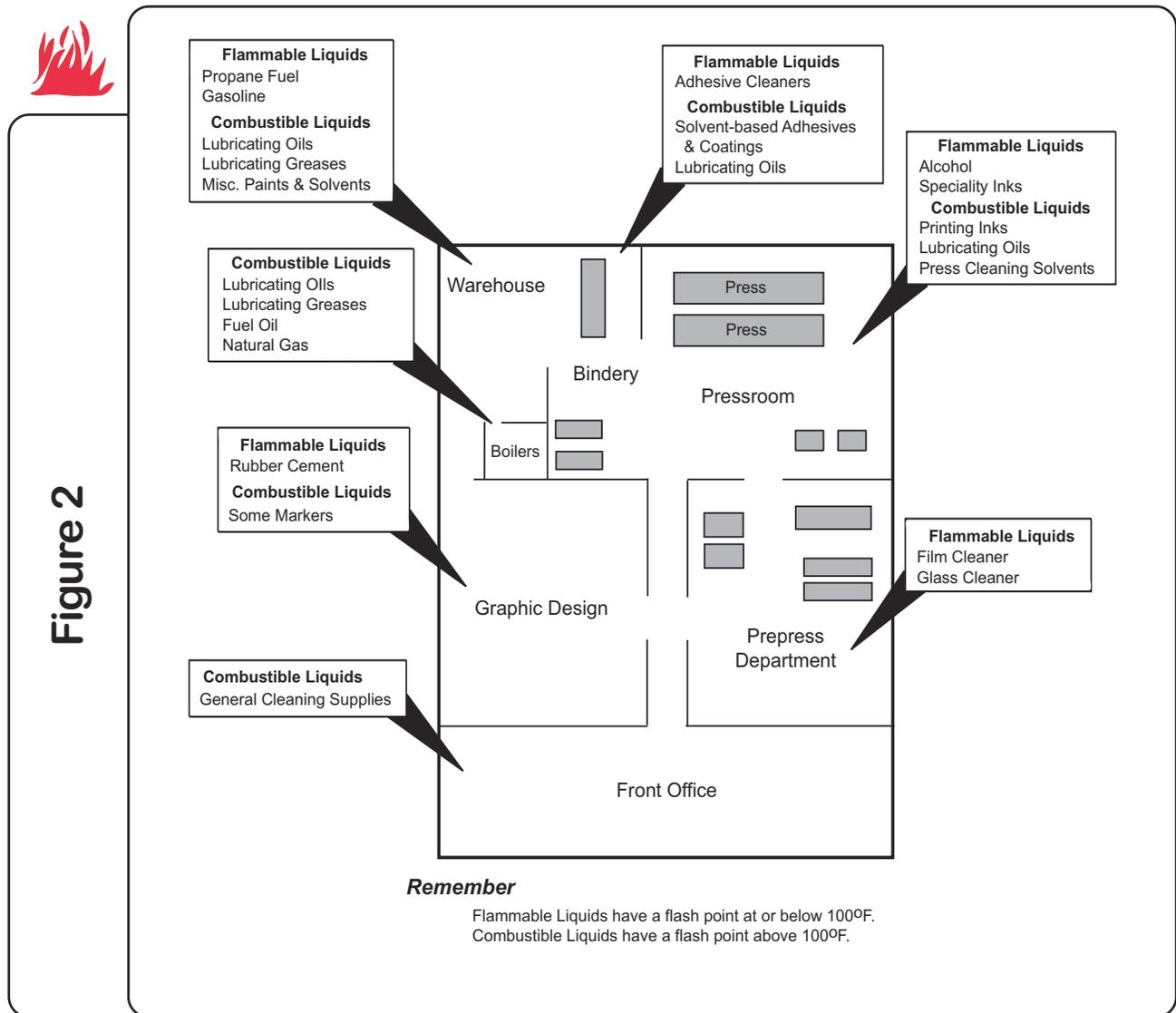


Important Definitions

## Flammable and Combustible Liquids in the Print Shop

Flammable and combustible liquids can be found in almost any department.

Regardless of shop size, flammable or combustible liquids are stored, handled and used in almost every department. The type and quantity of flammable or combustible liquid will dictate the requirements for its safe handling. For example, a half pint bottle of flammable rubber cement can be handled with less restrictions than a 55 gallon drum of alcohol. Refer to Figure 2 below for examples of flammable and combustible liquids and where they can be found in a print shop.



## How Do I Plan for an Emergency in my Print Shop?

**Printers with 10 or more employees are required to have a written Emergency Action Plan and Fire Prevention Plan.**

You are required to prepare for emergencies. This entails a thorough review of your operations and development of basic emergency response procedures. These procedures are outlined in the Emergency Action and Fire Prevention Plans. Although it is not required of print shops with fewer than 10 employees, it is strongly recommended that the Emergency Action Plan and Fire Protection Plan be written.

The Emergency Action Plan is a set of procedures to safely shut down operations, evacuate employees and handle medical emergencies. The Fire Prevention Plan consists of procedures to minimize fire safety hazards and respond to a fire.

You can combine the two plans into a single plan for emergency response in your shop. If you are also required to have a Contingency Plan for hazardous waste (page 30), you can use it as a basis to develop one comprehensive plan.

- Section 1 - Company Policy
- Section 2 - Description of Operations & Storage Practices
  - Locations of Flammable/Combustible Materials
  - Critical Operations
- Section 3 - Preparedness & Prevention
  - Procedures to Prevent Fires, Spills & Explosions
  - Emergency Equipment
- Section 4 - Notification Procedures
  - Emergency Coordinators
  - Outside Local, State & Federal Agencies
  - What Information to Provide Agencies
- Section 5 - Emergency Response
  - Initial Response
  - Fire & Explosion Response
  - Spill Response
    - Printing Inks
    - Press Cleaning Solvents
    - Photochemicals
    - Fountain Solutions
    - Lubricating Oils & Miscellaneous Materials
- Section 6 - Evacuation Procedures
  - Basic Procedures/Employee Census/Attendance
  - Refuge Areas
  - Reentry Procedures
- Appendices
  - Emergency Phone Numbers
  - Evacuation Route & Emergency Equipment Maps



**Emergency Action and Fire Prevention Plan Table of Contents**

## What Employee Training Should I Do?

**Employees must be trained in the basic emergency procedures.**

Employees must be trained in case of an emergency. Should your operations or emergency procedures change, employees must be retrained. You should document this training.



## Locating Fire Extinguishers and Fire Hoses



Fire extinguishers and hose must be strategically located in your shop.

The Fire Marshal requires fire extinguishers in certain parts of your shop. Their placement depends on where flammable and combustible materials are stored and used. If you allow employees to use fire extinguishers in your shop, OSHA requires annual employee training for their proper use (page 68).

First, your local fire department and building inspector will tell you where fire extinguishers and fire hoses are required under Indiana Fire and Building Codes. Fire extinguishers are classified according to the types of fire below:



**Class A – Ordinary Combustibles (wood, paper, etc.)**

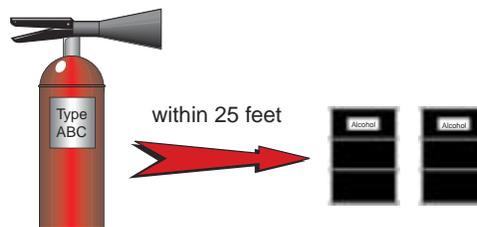
**Class B – Flammable and Combustible Materials**

**Class C – Electrical Fires**

**Class D – Combustible Metals (not found in print shops)**

The most common fire extinguishers found in a print shop are the combination ABC fire extinguishers, designed for use on Class A, B and C fires. Fire hoses are only used for Class A combustibles, found in areas like paper storage.

Fire extinguishers must be located within 25 feet of flammable/combustible liquid storage or use and within 75 feet elsewhere in the shop. In some instances, state regulations require a fire extinguisher in storage areas of flammable/combustible materials, such as a chemical storage room.



All fire extinguishers and fire hoses must be inspected on a monthly basis. The purpose of this inspection is to ensure that they are suitably charged, in good condition, and access is not blocked.

Frequently, shop storage space is at a premium and fire extinguishers and fire hoses get blocked. Fire extinguishers and fire hoses must be readily accessible at all times.



Every 12 months, fire extinguishers and fire hoses must undergo a maintenance check to ensure proper function. This is usually performed by an outside service. Make sure the units are tagged to document the inspection.

## Do I Have to Provide Fire Extinguisher Training?

Employees allowed to use fire extinguishers are required to be trained annually.

Only employees allowed to use fire extinguishers or fire hoses must be trained. This training is required annually by OSHA. If fire extinguishers are provided, but not intended for employee use, then you must have an Emergency Action and Fire Prevention Plan and provide procedures for immediate building evacuation in a fire emergency. See page 66 for more discussion on the plan. You are still required to perform the monthly inspections and annual maintenance checks.

Many local fire departments will provide the training at minimal to no cost. Live demonstrations and hands-on training are recommended, but not required. Make sure that you document the training.

## Emergency Phone Numbers and Alarm Systems

You are required to have a mechanism in place to adequately alert employees to an emergency or evacuate the building.

OSHA requires that you to post emergency phone numbers at strategic locations around the shop.



Many shops post emergency phone numbers on the employee bulletin board. We recommend that the emergency numbers be posted at all phones in the production areas. Make sure you include fire, police, ambulance, Emergency Coordinator and any other important numbers. Keep the list of phone numbers up-to-date. See page 112 for a sample Emergency Notification List.

You are also required to provide a mechanism to alert employees to an emergency situation or to evacuate the building. This can be done by a fire alarm, with stations located throughout the shop, or through a phone intercom system. Be reminded that the alarms or phone intercom must be heard above shop noise. Visual alarms can supplement a sounding alarm.

## Fire Prevention

Special precautions should be taken when handling flammable liquids.

You can limit your exposure to the risk of fire in your shop by following these precautions.

## # 1 - Don't Overlook Ignition Sources



### What You Can Do



Always use approved containers for the storage of flammable and combustible liquids. USDOT drums and approved safety cans are acceptable. For small quantities (less than one quart), plastic bottles or squirt bottles are acceptable. Make sure they are labeled according to HazCom – product name, primary hazards and target organs.



Avoid storing flammable and combustible liquids near electrical panels, press controls, outlets, light switches, overhead lamps, bench grinders, etc. Vapors from these liquids may travel along table tops, floors, walls or ceilings to reach an ignition source.



Parts washers should be installed with proper wiring and away from electrical panels. Although these washers have fire safety devices, splashing and spillage from routine parts washing are still potential fire hazards. If the washers are so designed, keep their covers closed when not in use.

## # 2 - Be Aware of Hazardous Conditions



### What You Can Do



Properly ground flammable liquids when stored and dispensed. Many times employees do not realize that, when dispensing liquids, the receiving container must also be grounded. There must be a continuous ground from receiving container to dispensing container to the earth ground. Call your local fire department for guidance.



Do not ignore small spills or leaks of flammable and combustible liquids. Frequent spill cleanup and general housekeeping are important aspects in fire prevention.



Keep all containers closed when not in use.



If you store soiled shop towels in small safety cans near the press, you must empty them daily. These containers are not designed for long term storage. Soiled shop towels can be stored in labeled and covered 55 gallon steel drums until pickup. Use drums with false bottoms to collect excess solvent for proper disposal.



Keep only enough flammable and combustible liquids in your work area to do the job. Significant quantities should be stored elsewhere or additional fire prevention practices must be in place.



Store flammable and combustible liquids in fire safety cabinets or professionally engineered chemical storage rooms as required under the Indiana Fire Code.



You cannot store more than the following flammable liquid quantities in containers outside a fire safety cabinet, chemical storage room or designed fire area:

Class IA	25 gallons
Class IB	60 gallons
Class IC	90 gallons

Examples of Class IA liquids – acetone and some alcohols. Examples of Class IB & IC liquids – methyl ethyl ketone, toluene, gasoline and some low flash blanket/roller washes.



Take time to isolate flammable and combustible materials away from welding and other hot work. The Indiana Fire Code has specific requirements for welding and hot work. Contact DFBS for more information. See page 113 for resource information.



Provide adequate ventilation for work and storage areas. Local exhaust hoods may be necessary over parts washers and in chemical storage rooms. Use an experienced engineer or fire safety consultant to advise you of all requirements applicable to flammable vapor exhaust.

## # 3 - Train Your Employees

### What You Can Do



Provide employees with awareness training on the proper handling and storage of flammable and combustible liquids. Instruct them on proper grounding techniques.



Promote employee suggestions on better housekeeping, improved handling and using smaller quantities of these liquids.



Prohibit smoking in areas where flammable and combustible liquids are stored, handled or used. There should be a strict policy of no smoking in the pressroom.



Report spills and leaks for quick cleanup.



Make sure employees understand their responsibilities when a fire is discovered. Sound the alarm and evacuate.



If you allow employees to use fire extinguishers, ensure that they are trained in their proper use annually. Use a fire extinguisher for small incipient fires only. And, never use water on burning flammable or combustible liquids.



Remember to notify the fire department every time there is a fire.

# Community Right to Know

The Superfund Amendments Reauthorization Act (SARA) of 1986, created a program with two goals: to facilitate and promote planning for chemical emergencies at the state and local levels; and to provide information to the public about the chemicals used, stored, and released in their communities. To implement these two goals, EPA established regulations requiring companies to gather certain information for community emergency planning efforts. The rules established a network of emergency planning entities at the local, state, and federal level.



SARA emergency planning provisions are designed to evaluate risks associated with chemical use and accidental releases to the environment. To reduce risks, EPA and IDEM encourage prevention, preparedness, and quick response to chemical emergencies. If properly executed, these three measures can make the difference in averting disaster. Prevention involves safety measures, sound management and storage practices, and preventive maintenance – preparedness anticipates an accident that occurs despite prevention measures. Emergency preparedness plans help companies and local and state governments respond to accidents.

## What are the Reporting Requirements?

There are five reporting requirements for hazardous chemicals.

Some printers may be subject to Indiana Emergency Response Commission (IERC), the Department of Revenue and EPA reporting requirements for hazardous chemicals as follows:

-  Initial IERC notification for the presence of extremely hazardous substances (EHS). (SARA Title III, Section 302).
-  The annual hazardous chemical inventory report, also known as the Tier Two Report (SARA Title III, Sections 311 and 312) submitted to IERC, LEPC and local fire departments. (due by March 1 annually)
-  The annual Toxics Release Inventory Report, also known as Form R (SARA Title III, Section 313). (due July 1 annually)
-  The Hazardous Chemical Inventory Fee Return (Form HC-500) submitted to the Indiana Department of Revenue.
-  Emergency release notification of IDEM, IERC and EPA's National Response Center.

If you store and/or use large quantities of film and plate chemistry, inks, solvents, fuels (propane, fuel oil, gasoline, etc.), you may be subject to one or more of the above requirements.

## Am I Required to Report my Hazardous Chemicals?

To determine if you are required to notify the IERC or EPA about hazardous chemicals in your shop, you need to know two things.

First, only certain extremely hazardous substances (EHSs) are subject to notification and reporting requirements. Second, you must store these chemicals above certain threshold quantities at any time during the calendar year. (Note: Threshold Planning Quantities (TPQs) apply only to EHSs.)

There are hundreds of listed hazardous chemicals with threshold quantities. For a complete list, see 40 CFR Part 355, Appendix A. Many of the listed hazardous chemicals are not used in lithographic printing. Below is a list of chemicals commonly found in print shops and translator volumes to determine whether you have to report. For any other chemicals required to have a MSDS by OSHA, the threshold quantity is generally 10,000 lbs., unless otherwise stated.



### Common Chemicals

CAS Number	Chemical	TPQ (lbs)	Typical Source	Translator Volume
50-00-0	Formaldehyde	100	Fixer	5,000 gal (total fixer)
123-31-91	Hydroquinone	500	Developer	3,300 gal (total developer)
7664-93-9	Sulfuric Acid	500	Batteries	80 gal (total in batteries)
N/A	Total Inks	10,000	Production	1,180 gal
123-51-3	Isopropyl Alcohol	10,000	Fountain Solution	1,490 gal
N/A	Blanket Wash	10,000	Press Cleaning	1,490 gal
N/A	Gasoline	10,000	Fuel	1,400 gal
N/A	Propane	10,000	Fuel	2,300 gal
N/A	No. 2 Fuel Oil	10,000	Fuel	1,150 gal

\* Note – If your quantity estimates are close to the translator volumes, you should make a more accurate determination. Remember – Only notify for chemicals stored in excess of the TPQ at any time during the calendar year.

### Case Study

A small printer used the following quantities of chemicals for the calendar year 1999: 250 gallons of fixer, 200 gallons of developer, 55 gallons of isopropyl alcohol, and approximately 200 lbs of ink. (To convert the ink to gallons, divide by 8.5 lbs/gal on average to get 23.5 gallons of ink.) The printer does not have to report the hazardous chemicals.

To determine if chemicals stored in your shop exceed the threshold quantity, you must quantify the chemical in one of two ways. You can quantify only the chemical based on its concentration in the mixture, or you can report the whole mixture. This may allow you to remain exempt from the reporting requirements. If you are significantly below the threshold quantity, you can document this in a file memo and only reevaluate when chemical usage significantly changes. For smaller printers, inks and fuels stored in bulk quantity could trigger the notification and reporting requirements under SARA.

A midsize community newspaper used the following quantities of chemicals for the calendar year 1999: 800 gallons of fixer, 700 gallons of developer, 600 gallons fountain solution, and approximately 43,000 lbs of ink. There is also a fuel oil tank with a capacity of 1,500 gallons. To convert the ink to gallons, divide by 8.5 lbs/gal on average to get 5,060 gallons.) The newspaper has to report the ink and diesel fuel because they exceed the translator volumes.



Case Study

## When Do I First Notify?

Once you attain or exceed any of the TPQs, you must notify the IERC and your LEPC.

Within 60 days of exceeding any threshold quantity, you must send the notification form (302 Form) to the IERC and your Local Emergency Planning Committee (LEPC).

You are also required to submit the 311 Reporting Form to the IERC, LEPC and local fire department. This form provides information about the reportable chemicals in your shop. You must submit the MSDSs for the reportable chemicals or prepare a hazardous chemical list. If you prepare a hazardous chemical list, it must include the hazardous chemical name or common name and any hazardous component of each chemical (except when reporting by mixture). You should group the chemicals or mixtures by hazard category (combustibles, acids, caustics, etc.).

Indiana has 92 LEPCs. These committees consist of professionals from state, local, private, and public organizations. The functions of the LEPCs are to develop and manage the emergency response plans dealing with accidental chemical releases from facilities, and to distribute information to the general public. For a complete list of the LEPCs, see the IERC SARA Title III booklet for the 302 and 311 Forms.



Indiana LEPCs

If, after initial notification, you find a new reportable chemical, or there has been new information on a previously reported chemical, you must renotify. Submit any new MSDSs or a revised list of chemicals and the Facility Information Sheet (available from IERC) to the IERC, your LEPC and local fire department within 90 days of the determination.

The 302 and 311 Forms are available from IERC.

## Do I Have to Submit an Annual Report?

If you have reportable chemicals in quantities above their threshold quantities at any time during the year, you are required to submit a Tier Two Report.

The Tier II Report required by Section 312 is an **annual inventory form** for reporting your hazardous chemicals. Chemicals stored any time during the calendar year, and in excess of the threshold quantities, must be reported. (Refer to the Table on page 72 for the EHS TPQs.) It must be sent to the IERC, LEPC and the local fire department by March 1 of each year. You complete the form for the previous calendar year. You can obtain the Tier II Report form directly from the IERC. See page 113 contact information.

Even if your chemicals and quantities do not change from year to year, you still have to submit the Tier II Report by March 1 annually.

### Case Study

A plant had a fire. When the Fire Department arrived, they asked for any updates to the Tier Two information filed from the previous year. This is an important reason why continual updates must be made.



Right-to-Know  
Tip

## What is the Hazardous Chemical Inventory Fee Return – HC-500?

The HC-500 form is used to determine the fee for submitting the Tier II Report. It is mailed separately to facilities by the Indiana Department of Revenue around the first week of February of each year. Note: 90% of the hazardous chemical inventory fees collected by the Department of Revenue are returned to the local community through public education and the implementation of safety measures concerning hazardous chemicals.

## Release Reporting – Form R The Toxic Release Inventory (TRI)

Form R is a special inventory form due July 1 each year for chemicals used or processed in the previous calendar year.

Form R is only required if you used in your shop over 10,000 lbs, or processed (incorporated into product) over 25,000 lbs of specifically listed chemicals or a new group of chemicals call Persistent Bioaccumulative and Toxic Chemicals (PBTs for short) and have the equivalent of 10 or more full-time employees. (Only manufacturing facilities with a SIC code between 20 and 39. Printing and publishing are usually a SIC code of 27.)

These chemicals are not necessarily the same chemicals reported on the Tier II Report. See the next page for a list of Form R chemicals typically found in lithographic printing. If you are a large printer, you may need to review the entire list to be sure you comply with the reporting requirements. **Remember – these hazardous chemicals must be used (not stored) in over 10,000 lbs or you processed over 25,000 lbs during a calendar year.**

You can call EPA’s Emergency Planning and Community Right-to-Know Hotline for a “List of Lists” of Tier II and Form R chemicals. See page 113 for contact information.

The completed Form R must be mailed to the USEPA address in the instructions and to:

IDEM-OPPTA  
 150 West Market Street, Suite 703  
 Indianapolis, IN 46204-2811  
 (317) 232-8172 or (800) 988-7901 (Indiana only)

You may need a consultant with experience in completing the form to help you. USEPA will also send you a TRI book and diskette to help you prepare the report. Go to [www.epa.gov/tri](http://www.epa.gov/tri) for more information.

<u>CAS Number</u>	<u>Chemical</u>
7440-39-3	Barium
7440-47-3	Chromium
7440-50-8	Copper
107-21-1	Ethylene Glycol
123-31-9	Hydroquinone
67-56-1	Methanol
108-10-1	Methyl Ethyl ketone
75-09-2	Methylene Chloride
127-18-4	Perchloroethylene
108-88-3	Toluene
108-38-3	m-Xylene
95-47-6	o-Xylene
106-42-3	p-Xylenes
N/A	Xylene Mixture
N/A	Certain Glycol Ethers



Typical Form R Chemicals  
Found in a Print Shop

To lessen the amount of time spent each year on the SARA review, and to have defensible documentation, consider creating a database that contains each product name and all chemical constituents, and CAS numbers. This will be a big help evaluating what SARA, air, water and waste regulations may apply to your shop.



**Important Tip**

# Spill Reporting

The Indiana Spill Rule requires printers and IDEM to respond to and cleanup a spill and minimize potential environmental and public health impacts.

The reporting requirements under the Indiana Spill Rule are in addition to reporting requirements under other federal laws and regulations, such as The Clean Water Act, SARA Title III, OSHA, and USDOT HazMat regulations.



## Who's Responsible for Reporting a Spill?

It is the printer's responsibility to notify IDEM of a reportable spill.



Local emergency response agencies or contractors do not have any responsibility to report a spill to IDEM. Under state and federal law, **you** are responsible for contacting IDEM and cleaning up spills.

There are significant penalties for not reporting a release or spill to IDEM when required. **You must report a release within two hours of its discovery or sooner depending on your local jurisdiction.** The maximum penalty is \$25,000 per day for not reporting a spill. **When in doubt, report the spill to the IDEM's Spill Reporting Hotline and they will help you make a determination on whether it is reportable. It is not illegal to have an accidental spill, but it is illegal to fail to report it or fail to clean it up.**

By calling IDEM's Spill Reporting Hotline (toll free 1-888-233-7745 or 317-233-7745), IDEM will provide you with **technical support and guidance** on what to do. They will also help you identify any other agencies you must notify, for example EPA's National Response Center (NRC) or the Local Emergency Planning Committee (LEPC). (See page 73 on LEPC's.) However, they will not notify the other agencies on your behalf; you must notify them yourself.

## When Do I Report a Spill?

The Indiana Spill Rule requires all printers to report spills **TO THE ENVIRONMENT** when they exceed a Reportable Quantity, damage waters of the state or are not cleaned up.

You may have to notify IDEM, the NRC, the LEPC, or your local wastewater treatment plant (if it enters a sanitary sewer). IDEM's Office of Land Quality has prepared a brochure on when to report a spill to IDEM. Call IDEM for a copy. See page 113 for contact information.

## What are the Reportable Quantities?

**A Reportable Quantity is the quantity of chemical, above which if released to the environment, must be reported to IDEM and the NRC.**

There are hundreds of chemicals and hazardous wastes with Reportable Quantities (RQs). Here is a list of RQs for common printer chemicals and wastes.

Common Reportable Quantities	Chemical	RQ (lbs)	Hazardous Wastes	RQ (lbs)
	Acetone	5,000	Ignitable (D001)	100
	Ammonia	100	Corrosive (D002)	100
	Copper	5,000	TCLP - Barium (D005)	1,000
	Diethanolamine	100	TCLP - Chromium (D007)	10
	Formaldehyde	100	TCLP - Lead (D008)	10
	Hydroquinone	100	TCLP - Silver (D011)	1
	Methyl Ethyl Ketone	5,000		
	Methylene Chloride	1,000	<u>Petroleum Products</u>	
	Perchloroethylene	100		
	Phenol	1,000	Inside Boundary	1,000 gal
	Sulfuric Acid	1,000	Outside Boundary	55 gal
	Trichloroethylene	100		
	Toluene	1,000		
	Xylene (m & o isomers)	1,000		
Xylene (p isomer)	100			

### Case Example

A printer ships offsite waste blanket wash as a hazardous waste (designated D001). During truck loading, a drum falls and spills its contents into a nearby storm drain that leads to a river. A drum of blanket wash weighs approximately 450 lbs (100 lbs RQ – D001 waste). IDEM and the NRC must be notified of the spill.

If you have a spill of a chemical not listed above, you can consult these tables: 40 CFR 117.3 for reportable hazardous substances under The Clean Water Act; and 40 CFR 302.4 and 355, Appendix A under the Community Right-to-Know SARA Title III. **Both the Clean Water Act and SARA Title III are federal laws that have spill reporting requirements.**

Because of the numerous laws and regulations on agency notification, the table of spill scenarios and case examples (next page) will help you on when to report a spill to IDEM. When in doubt, call IDEM for guidance because of the penalties for not notifying IDEM of a reportable spill.

There are other regulations that you must be aware of regarding spills. See SPCC (page 86) and Spill Rule information (page 81).





When to Report a Spill

Spill Scenarios	Do I Have to Report the Spill?
Discharges permitted under an applicable permit and acute injury to animals or humans does not occur.	No
Materials released to the water, if in excess of permitted limits and the volume, concentration, or source of the release is not contemplated in the permit. (Permit exceedances are exempt from Indiana Spill Rule.)	Yes
Materials spilled inside shop, cleaned up <u>and</u> no outside release.	No
Spills of less than one pound or one pint.	No
Spills of petroleum products used in motor vehicles and other equipment that do not exceed <u>55 gallons</u> , do not enter surface waters or groundwater, are contained, <u>and</u> spilled material cleaned up.	Yes
Spills that damage the waters of the state causing death or acute injury to humans or animals.	Yes
Spills inside your property that ultimately or potentially damage waters of the state <u>and</u> are within 50 feet of an offsite private drinking water well or 100 yards of sensitive resources like wetlands, wildlife areas, hatcheries or recreational areas.	Yes
Spills of 55 gallons or more of petroleum product beyond your facility boundaries.	Yes
Spills of any objectionable substances (any other unlisted substances) that may damage the waters of the state.	Yes
Spills on soil within your property exceeding a hazardous substance's RQ or 100 lbs, whichever is less.	Yes
Spills on soil within your property of 1,000 gallons or more of petroleum product.	Yes

**IMPORTANT NOTE:** Releases to the air over the RQ are not reportable to IDEM under the Spill Rule, but are reportable to the IERC for whom IDEM provides the service of receiving the notification. IDEM uses the same spill phone number 888-233-7745 for EPCRA/SARA Title III, Section 304 release notification.



**Case Example 1**

A drum of blanket wash is dropped from a pallet on an outside loading dock. The drum ruptures and blanket wash flows into a nearby storm drain. The storm drain leads to a drainage ditch that goes to a stream. It is not clear how much wash entered the swell. Report this spill to IDEM regardless of quantity because of damage to the waters of the state.

**Case Example 2**

A 30 gallon spill of blanket wash inside the Pressroom enters a floor drain that discharges to the municipal sewer system. Report this spill to IDEM and the wastewater treatment plant as required by your wastewater discharge permit, if you have one. Otherwise, contact the wastewater treatment plant.

**Case Example 3**

A 30 gallon spill of blanket wash inside the Pressroom enters a floor drain that discharges to a stormwater sewer or combined sewer (a municipal sewer for both sanitary and stormwater). Report this spill to IDEM .

**Case Example 4**

A fuel truck spills 20 gallons of heating oil on the asphalt/concrete, soil, etc. behind your shop. You quickly contain it and it does not contaminate soil. Cleanup the spill, but do not report it to IDEM.

**Case Example 5**

Someone spills 1,005 gallons of heating oil on the concrete (with no cracks or holes in the concrete) and you cleanup the spill immediately. You do not have to report it to IDEM.

## Sample Emergency Notification List in Case of a Spill

**Primary Emergency Coordinator**

\_\_\_\_\_

Work \_\_\_\_\_ Home \_\_\_\_\_

**Alternate Emergency Coordinator**

\_\_\_\_\_

Work \_\_\_\_\_ Home \_\_\_\_\_

**Other Emergency Phone Numbers**

\_\_\_\_\_ Fire Department

911

\_\_\_\_\_ Police Department

911

Ambulance Service

911

\_\_\_\_\_ Hospital

\_\_\_\_\_ County Local Emergency Planning Committee

911 or \_\_\_\_\_

\_\_\_\_\_ IDEM's Spill Reporting Hotline

1-888-233-7745 or 317-233-7745

\_\_\_\_\_ National Response Center

1-800-424-8802

\_\_\_\_\_ Wastewater Treatment Plant

\_\_\_\_\_

## What Information Should I Report?

You must provide as much information to IDEM as soon as possible or within two hours of discovery.

As required, you must provide IDEM, the NRC or IERC with the following information at the time of reporting:

-  Company name, address & telephone number.
-  Contact person and telephone number.
-  Name or identity of material spilled .
-  Quantity of material spilled.
-  The location and time (and duration, if known) of the spill.
-  Impact of spill (surface water, groundwater, soil, etc.)
-  Identity of contractor responding to spill and response measures taken.
-  Any other significant information or information requested by IDEM.

You are required to submit the above information in writing if requested by IDEM. Be sure to include what actions were taken to clean up the spill. The report can be in the form of a letter. The NRC, IERC or LEPC may require additional information. When you notify any agency by phone, you should always ask what followup efforts you must take, including written reports.

## What Other Agencies Need to be Notified?

There are other reporting requirements to local response agencies, IOSHA and the USDOT.

You may be required to report a spill to a local response agency like the fire department, health department or other municipal agency. Call these agencies as well as to request guidance on their specific reporting requirements.

For IOSHA, you must call the nearest area office when a fatality occurs in the workplace or when three or more employees are hospitalized. IOSHA must be notified **within eight hours** of discovery.

Notification of the USDOT is required when an accident involving hazardous materials or wastes results in: a fatality or hospitalization; more than \$50,000 in property damage; public evacuation; or the closing of one or more major roads for more than one hour.

For both IOSHA and USDOT notifications, followup reports are required.

## Secondary Containment of Hazardous Materials

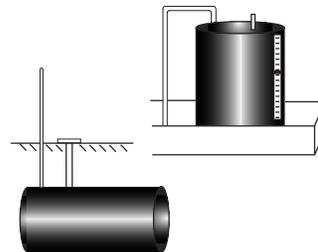
**You may be subject to additional requirements for bulk hazardous material storage.**

If you have aboveground storage tanks that contain liquid hazardous materials and your storage area or transfer area was constructed after June 27, 1999, you may be required to install a secondary containment structure. If your aboveground storage tank contains less than 660 gallons, you are not required to comply with this rule. If you move your aboveground tank or move your storage area or transfer area, you must comply with this rule. This rule does NOT apply to hazardous waste. Call CTAP for more guidance on this rule.

# Storage Tanks

**S**torage tanks provide a convenient and economic method of storing materials used in your shop. They can also pose serious threats to the environment if they leak or fail. Cleaning up tank leaks may expose your company to costly liabilities.

**C**urrently, there are an estimated 30,000 aboveground and underground storage tanks in the State of Indiana. Many of these tanks are used for fuel storage. They may also contain materials such as solvents and printing inks. Special considerations must be made when installing and maintaining storage tanks.



In this chapter, an introduction is provided on underground storage tanks (USTs) and aboveground storage tanks (ASTs). IDEM, The Department of Fire & Building Services (DFBS) and IOSHA have regulations regarding certain types of storage tanks. The regulations depend on three factors: 1) size of the tank; 2) the material stored; and 3) the total capacity of tanks in your shop. For more specific guidance, call IDEM's Underground Storage Tank Branch, the DFBS or IOSHA. See page 113.



## Important Definitions

**Underground Tank (UST)** means a tank or tank system where 10% or more of the total tank and pipe capacity are underground. UST systems of 110 gallons or less total capacity are exempt.

**Aboveground Tank** means more than 90% of the total tank and piping capacity are aboveground and visible for inspection.

**Release Detection** means various automatic or manual methods to detect leaks from a tank.

**Corrosion Protection** means various methods to protect a storage tank from corrosion, for example, cathodic protection and dielectric coatings.

**Overfill Protection** means various methods to

prevent the overfilling of a storage tank by the use of alarms or flow restriction devices.

**Spill Prevention** refers to a basin, bowl or drip pan integral to the tank fill pipe that contains spillage when disconnecting the transfer hose.

**Secondary Containment** means a full or partial enclosure that prevents migration of tank leaks into the environment.

**Vent** means a piping or valve mechanism that allows vapors to be released to the atmosphere. It prevents the accumulation of excess pressure in the tank.

## Do I Need to Register my Underground Storage Tank?

All USTs with few exceptions must be registered with IDEM.

**T**here are some exemptions that may apply to print shops, for example; hydraulic lift tanks; electrical equipment tanks; emergency spill tanks emptied expeditiously; stormwater/wastewater holding

tanks; and septic systems. A UST containing heating oil (e.g., No. 2 fuel oil) for building heat for consumptive uses on the premises is also exempt. If you have any questions, on UST registration, call IDEM for guidance.

If you have an unregistered UST or you intend to install one, you must notify IDEM of that UST on Form 45223. You are also required to notify IDEM when upgrading or closing out USTs. Notification forms must be submitted within 30 days of the intended activity. You may also be required to notify the local fire department as well. Call IDEM's UST Branch for forms and additional guidance.

## What UST Standards Apply?

ALL USTs must meet IDEM's new tank standards.

All currently operating USTs must meet standards for release detection, corrosion protection and spill/overflow prevention. Examples of these standards are provided below:

### Release Detection



Manual tank gauging, tank tightness testing, automatic tank gauging or other release detection systems.

### Corrosion Protection



Fiberglass-reinforced (RFP) tanks, coated steel tanks, steel tanks with either galvanic or impressed current corrosion protection systems

### Spill & Overflow Prevention



Catch basins around fill pipes, high level alarms, flow restrictors and cutoffs

New USTs must be installed by a tank installer certified by Office of the State Fire Marshal. A Construction Design Release must be obtained from DFBS before a new installation is constructed or the capacity of an existing installation is increased. After installation of the UST system, it must be inspected before backfilling, tested for leaks, and certified by the installer before it can be filled with product.

## Must I Upgrade my Existing UST?

If you had a UST installed before December 22, 1998, it is regulated as an existing UST.

Existing USTs must meet all new UST performance standards as of December 22, 1998. **If you did not upgrade your existing USTs to new tank status or close them out before that date, you are in violation of IDEM's regulations and will face penalties.**

Existing USTs



Close or Upgrade by December 22, 1998

## Do I Need to Keep Records for my UST?

**You are required to keep certain records on file and available for inspection by IDEM.**

**Y**ou must keep records on all tank registrations, repairs and upgrades, inventory logs, release detection (including monitor printouts, performance claims, sampling, testing, calibration and repairs, etc.), and cathodic protection (e.g., including inspections, monitoring, and voltage and amperage readings). You must keep all records onsite and available for inspection by IDEM.

## What is UST Financial Responsibility?

**If you have a regulated UST, you must meet financial responsibility requirements.**

**I**f you own a UST, you are financially responsible for spills, releases, and certain third-party damages. There are six mechanisms available to demonstrate financial responsibility: self-insurance, commercial insurance, standby trust fund, letter of credit, surety bond or state fund.

The Excess Liability Fund (ELF) was established to provide coverage for the major portion of an eligible tank owner's responsibility. The tank owner must still have funds available to cover ELF deductibles in the event of a release. Contact IDEM's UST Branch for more information. See page 113 for resource contacts.

## What Do I Do if I Have a Leaking UST?

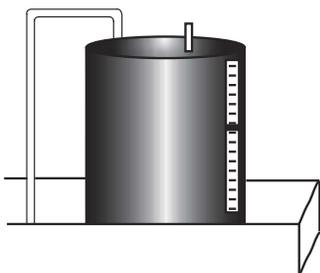
**If you discover a UST release, you are required to notify IDEM.**

**T**his notification must be made within two hours of the discovery. You must take whatever actions necessary to prevent further release of the product. Such actions include removal of the tank product, removal of contaminated soil, and other mitigating measures. IDEM has a manual available, "The Underground Storage Tank Branch - Guidance Manual". This manual provides information on what you must do. At a minimum, you will have to complete a UST Closure Report. If you determine that there is significant soil and groundwater contamination, you will be required to conduct a site characterization study and implement a corrective action plan.

**T**he leaking UST notification applies even if you were exempt from spill reporting because of the type or quantity of product spilled. See Spill Reporting on page 76 for more information.

## What are the Requirements for Aboveground Storage Tanks?

Certain aboveground storage tanks are regulated by the Department of Fire & Building Services (DFBS).



**A**boveground storage tanks (ASTs) containing Class I, II, IIIA and IIIB liquids (definitions on page 64) are subject to DFBS regulations for design, installation, maintenance, testing and certification. Before construction or installation of a tank, you must submit an application with design drawings to the State Building Commissioner's Office for construction design review.

There are four types of ASTs that are **exempt** from DFBS regulations:



**Wastewater mixing and holding ASTs**



**Septic tank systems**



**Liquid propane gas ASTs with less than 2,000 gallon individual capacity and 4,000 gallon total facility capacity as measured in gallons of water**



**Portable or temporary-use ASTs containing flammable and combustible liquids with a capacity of less than 660 gallons.**

## What are the AST Design and Technical Standards?

There are standards that apply to tank construction, pumps, piping, vents, etc.

**A**STs must meet a wide variety of DFBS and OSHA design and technical standards. There are AST construction issues regarding locale (inside/outside), structural integrity, tank support structures, building enclosure, and proximity to other tanks and operations. There are also requirements, depending on the type of flammable or combustible liquid stored, for pumps, tank vents, fill pipes/discharge lines, overflow protection devices, and vapor recovery.

**P**rinters who propose to install an AST, should retain a qualified architect or consultant to design the AST system and guide the application through the DFBS plan review process. You should plan on taking 3-6 months to get the necessary designs and releases depending on the complexity of the AST system.

## Oil Pollution Prevention Act and the SPCC Requirements

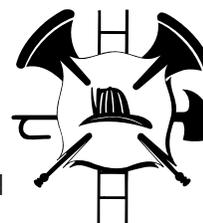
You may be subject to additional requirements for bulk oil storage.

Some printers may be required to have a Spill Prevention Control and Countermeasure (SPCC) plan. You must comply with EPA's SPCC requirements (40 CFR 112.1 through 112.7) if both of the following conditions describe your facility operations. The first is that you own or operate a non-transportation-related fixed facility that could reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines. (The definition of navigable waters includes most rivers, streams and tributaries in Indiana.) The second is that your facility has (1) an aboveground oil storage capacity of more than **660** gallons in a single container; or (2) a total aboveground oil storage capacity of more than **1,320** gallons; or (3) a total underground buried storage capacity of more than **42,000** gallons. (Note that if a tank has the requisite *capacity*, it doesn't matter whether the tank is *filled* to that capacity. The SPCC rule applies regardless of the tank's contents.) If your facility meets the SPCC criteria, you *must* prepare a SPCC plan and follow the other provisions of the SPCC rule. Call CTAP for more guidance or go to the US EPA web site at [www.epa.gov](http://www.epa.gov).

## Do I Need to Get Any Approvals From my Local Jurisdiction?

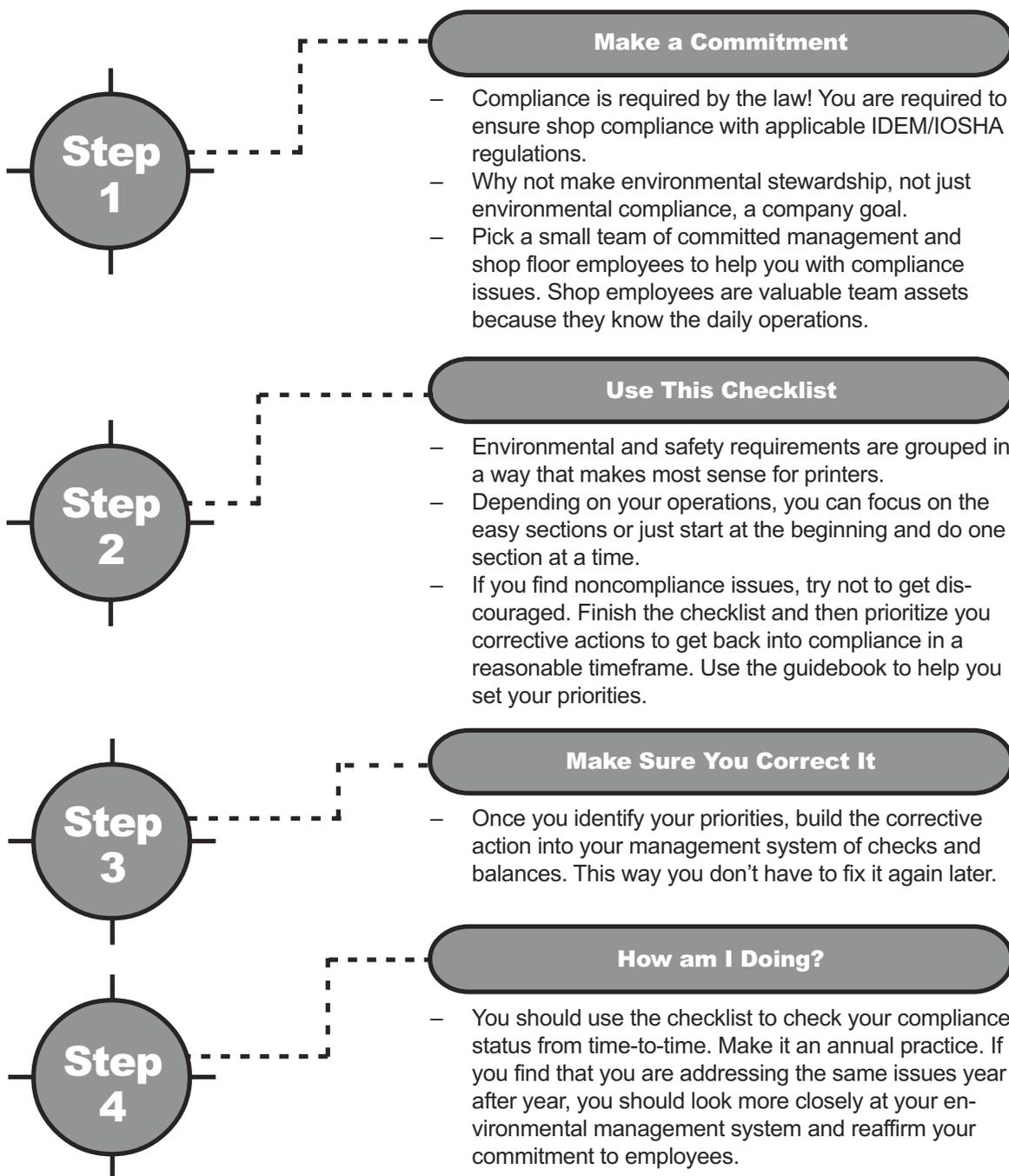
Your local Fire Chief or Fire Marshal may also issue an approval for AST system construction.

Local approval for AST and UST installations for flammable or combustible liquids may be required. Some municipalities have local ordinances that require separate approvals or permits to install and use ASTs or USTs. These approvals may come from the fire department, planning or zoning board or other municipal board/council. Approval may be granted under a general permit for the handling and storage of hazardous materials.



# Printers Checklist

Printers often say, if you explain the regulations to us in plain English, we'll comply. This guidebook takes regulations, some of which are very complicated, and translates them into simpler terms. Now printers have an opportunity to evaluate their own shops using a checklist based on this guidebook. To gain the biggest benefit, follow these steps.



# Printer's Checklist



Check off each item when completed.

## Air Quality

- Have you taken an inventory of emission sources?
- Have you calculated your Potential to Emit (PTE) VOC Emissions to determine the need to register IDEM or obtain an Operating Permit?
- Do you monitor your blanket and roller wash purchases to look for ways to reduce their use?
- Do you keep all containers of inks, coatings, adhesives, washes and fountain solutions closed when not in use?
- If you have pollution control equipment, have you determined whether an operating permit is required for that equipment?
- Have you determined whether you can meet annual fuel restrictions or get a Source Specific Operating Agreement or Operating Permit for your fuel combustion equipment?
- Have you evaluated the need to get an Operating Permit for emissions from your dust generating/filtration equipment?
- Have you determined whether Part 70 Operating Permits are required? Can you implement P2 to downgrade to an Operating Permit?
- Do you use significant quantities of Hazardous Air Pollutants? If so, have you determined the need for an operating permit?
- Do you use or store more than 10,000 lbs of flammable substances for a single process? If so, have you prepared a Risk Management Plan?
- Have you looked for ways to reduce blanket and roller wash including diluting them with water before application? 
- Do you keep containers of inks, solvents, fountain solutions and soiled shop towels closed? 
- Do you use VOC blanket and roller washes that have a low vapor pressure of less than 10 mm Hg. 
- Do you avoid solvents, coatings and adhesives containing Hazardous Air Pollutants like methylene chloride & toluene? 

Do you use alcohol-substitutes in the fountain solution?



## Land Quality

### Hazardous Waste

Have you evaluated your wastes to determine if they are hazardous?

Do you have Waste Profile Sheets for each hazardous waste and waste oil you generate? See page 22.

Have you performed a monthly hazardous waste inventory to determine your generator status? If so, what is it? CESQG \_\_\_\_ SQG \_\_\_\_ LQG \_\_\_\_

Have you obtained an EPA ID Number if you are a SQG or LQG?

Do you use USDOT-approved containers for waste accumulation and shipment?

Do you label all containers of hazardous waste when you first start filling them?

Does the label have the name of the waste and its primary hazards?

If the containers are in a Satellite Accumulation Area, are the containers then dated and moved offsite or to a Hazardous Waste Storage Area within three days after they are full?

Are all containers in the Hazardous Waste Storage Area labeled and dated? Do you ensure they do not exceed 180 days (SQGs) or 90 days (LQGs)?

Does the Hazardous Waste Storage Area have a warning sign posted and have secondary containment? Is it inspected on a weekly basis?

Are you segregating wastes to minimize regulatory requirements?

Do you minimize the amount of solvent and ink on your soiled shop towels? Are they kept in closed containers? If they are saturated, do you drain or wring out the towels before sending them to a laundry?

Do you use a licensed transporter for hazardous waste shipments?

Do you keep on file two manifest copies and the Landfill Disposal Restriction Form for each waste shipment? For routine shipments under a tolling agreement, do you keep the Bills of Lading? Are all shipping papers kept at least three years?

Do you or your transporter send the appropriate manifest copies to the state receiving the hazardous waste?

- If you are a SQG and LQG, have you prepared for an emergency by designating an Emergency Coordinator; posting emergency phone numbers; providing spill control equipment; training employees and having sufficient fire fighting equipment available?
- If you are a LQG, do you have a written Training Plan and Contingency Plan? Do you keep training records for annual employee training?
- Do you use squirt bottles to wash blankets and rollers, instead of open buckets to reduce waste solvent? 
- Do you generate enough waste solvent to purchase a solvent recovery unit? 
- Do you wring out saturated shop towels to reduce solvent going to laundry? 

## Waste Oil

- Is your waste oil sent offsite for recycling or energy recovery?
- Are the containers labeled as “Used Oil” or “Waste Oil”?
- Are the containers in good condition and kept closed?
- Are oil-saturated materials and wastes contained for offsite disposal?
- Do you use a licensed transporter to handle your waste oil, oily wastewater and oily debris?
- Do you ensure that only unsaturated oily shop towels are sent to the laundry?
- Do you generate enough waste press oil to purchase a portable oil filtration unit and reclaim the oil? 

## Universal Wastes

- Do you generate waste Ni-Cad, small lead-acid batteries? If so, do you collect them for recycling in containers marked as “Waste Batteries”, “Used Batteries”, or “Universal Waste Batteries”?
- Do you generate large lead-acid batteries (for example, forklift batteries)? If so, are they sent for reclamation? If not, are they disposed of as hazardous waste?
- Do you generate used fluorescent or mercury-vapor lamps? If so, do you collect them for recycling in containers marked as “Waste Mercury-Containing Lamps”, “Used Mercury-Containing Lamps”, or “Universal Mercury-Containing Lamps”?

- Do you limit universal waste accumulation to less than one year?
- Do you clean up leaking batteries or broken lamps and dispose of them as hazardous waste?
- Do you use licensed reclamation facilities to accept the universal wastes?
- Do you train your employees on the proper handling of universal wastes?
- If you are a LQH, do you keep records on universal waste shipments?

## Discarded Electronics

- Do you evaluate all obsolete electronics equipment feasible for reuse?
- If you cannot reuse or donate the equipment, do you send it to a reclamation facility?
- If the equipment cannot be reclaimed, do you determine which components are hazardous and collect them for proper hazardous waste disposal?

## Water Quality

- Do you discharge to a septic system? If so, do you have an IDEM permit to discharge to the groundwater?
- Do you discharge industrial wastewater to a municipal sewer? If so, do you have a discharge permit from the local sewer authority or IDEM?
- Do you discharge industrial wastewater to a surface water body? Can you modify your operations to discontinue the discharge? If not, do you have an NPDES permit from IDEM?
- Do you meet the discharge limits on your permit, perform the required testing, and submit results for your industrial wastewater permits (NPDES, industrial discharge to the sewer, stormwater, groundwater discharge)?
- Do you meet the general pretreatment standards found on page 46?
- Do you have Silver Recovery Units (SRUs) to pretreat silver-bearing wastewater before discharging to the sewer or septic system?
- Do you have the proper number of silver canisters for low volume discharges or an electrolytic SRU followed by the proper number of canisters to ensure efficient silver recovery?
- Are the SRUs maintained and serviced according to manufacturer specifications?

- Do you test the SRU discharge for silver to ensure it is working properly?
- Are you required to submit wastewater surveys periodically? If so, do you keep copies on file. If you change or add new processes have you notified your local sewer authority or IDEM to determine if your permit should be modified?
- Do you use chromium-free system cleaners or bleach for cleaning film processors? 
- Do you periodically tune your film processor to manufacturer specifications to minimize bath overflow? Do you adjust the squeegees to minimize carryover? 
- Do you use recirculators for developer, fixer and rinsewater to lower water use and discharge volume? 
- Have you evaluated silver-free films, subtractive plate developers, or aqueous proof developers? 
- Do you minimize fountain solution dumps by running the solution in the tank as low as possible? Do you cover the holding tank to prevent dust contamination? Do you filter the recirculating fountain solution to remove contaminants and extend the life of the solution? 

## Stormwater

- Do you conduct any chemical/waste storage or handling activities outside your shop? If so, can you relocate them inside. If not, did you obtain a stormwater discharge permit from IDEM? Have you prepared a written Stormwater Pollution Prevention Plan?
- Have you implemented the Best Management Practices for reducing stormwater contamination found on page 52?
- If you do not have any outside material storage or handling activities did you send a “No Exposure Storm Water Certification” to IDEM.

## Workplace Safety

### Hazard Communication

- Do you have a written Hazard Communication Plan?
- Do you label all containers, reservoirs and tanks with the product name, primary hazards (flammable, corrosive, etc.) and the target organs (eyes, skin, lungs, nervous system, etc.).
- Do you keep Material Safety Data Sheets (MSDSs) for all chemicals in your shop. (Even if you stop using the product, you must keep the MSDS for 30 years and document its period of use.)
- Do you keep a Chemical Product List (a list of MSDSs on file) with the written HazCom Plan? Do you update it at least annually?
- Do you train your employees and document the training?

### Lockout/Tagout

- Do you have a written Lockout/Tagout Plan?
- Do you keep an equipment inventory subject to lockout? Are the lockout sources and procedures described?
- Do you provide locks and tags for lockout? Is there only one key for each lock?  
Are employees authorized to perform lockout trained in the procedures specific to the equipment for which they are responsible? Are employees not authorized (also known as affected employees) trained in how the locks/tags are used and not to attempt to restart locked/tagged equipment?
- Do you perform an annual review and certification of the lockout plan and review the procedures with each authorized employee? Do you document this effort?

### Machine Guards

- Do you guard all ingoing nip points, slitters, guillotine cutters, rotating gears, and any other point of operation where an employee can get caught or cut?
- Do you have guards installed on older equipment even though they may not have come with guards?

- Do bench grinders have wheel guards, safety shields, and tool rests? The tool rests must be within 1/8 inch of the grinding wheel.

## Power Transmission

- Do you guard all rotating gears, pulleys, belt/chain drives and drive shafts below seven feet? It is strongly recommended that power transmission equipment be guarded to a height where employees cannot reach it.

## Personal Protective Equipment

- Did you conduct a Personal Protective Equipment (PPE) Hazard Assessment for each department? Document and sign the Hazard Assessment. Do you update the Hazard Assessment when operations or PPE needs change?
- Do you provide PPE?
- Do you conduct and document employee training in PPE use and care.
- Do you ensure that employees wear and take care of PPE?

## Flammable & Combustible Liquids

- Do you use approved, closable containers for flammable/combustible liquid storage?
- Do you store welding gases, inks and solvents away from ignition sources, such as electrical panels, and high voltage equipment?
- If you use liquids with a flash point of 100°F or less, are they properly grounded?

## Fire Extinguishers

- Do you have fire extinguishers within 25 feet of flammable/combustible storage areas and 75 feet for other nonproduction areas?
- Do you ensure that fire extinguishers are certified usable and tagged every 12 months?
- Do you ensure access to fire extinguishers, fire hoses, and alarms? Do you conduct monthly inspections?
- Are employees authorized to use fire extinguishers trained annually? Do you document the training?

## Means of Egress

- Do you ensure that exit doors are not locked?
- Are non-exit doors marked "Not an Exit" or the name of the room?
- Are aisles leading to exit doors clear and at least 36 in. wide?
- Do you ensure that exit signs and emergency lights are working?

## Electrical System Design

- Do you ensure all live electrical components in electrical panels are covered with noncombustible materials?
- Do you keep electrical panels clear with a three foot buffer zone? For panels over 600 volts, use a four feet buffer zone.

## Electrical Wiring & Equipment

- Do you ensure that all power cords are insulated?
- Do you use electrical tape to repair torn wires? Are you replacing or shortening damaged wires?
- Do you ensure that equipment with metal enclosures are properly grounded?
- Do you ensure that all portable lamps, vending machines and refrigerators are also grounded?
- Do you ensure that lamp fixtures below eight feet do not have exposed electrical components?
- Do you mark equipment disconnects, panels and breakers as to their purpose?
- Do you have any broken or missing outlet faceplates?

## Miscellaneous

- Do employees use safety glasses when cleaning with compressed air over 30 psi? Are nozzle tips designed to prevent back pressure buildup if the nozzle clogs?
- Do you ensure that storage mezzanines have top rails, mid rails and toeboards? Are they posted with a floor loading sign (e.g., 150 lbs/ft<sup>2</sup> maximum load)?

- Do you keep the OSHA 300 log current within six days of the last recordable injury? Do you post it during the months of February, March and April? Do you keep the logs for at least five years? The OSHA 300 log is not required for print shops with 10 or fewer employees.
- Have you conducted a noise survey to determine if you are required to have a mandatory Hearing Conservation Program? The action level is 85 dBA over 8 hours or 50% of dose level.
- If a Hearing Conservation Program is required, do you document annual hearing tests offered to employees ?
- Do you conduct and document annual hearing conservation training for employees exposed to noise in excess of the 85 dB threshold?
- If you have noise levels that exceed 90 dBA over 8 hours, have you installed engineering controls or provide, two types of hearing protection?
- Do you post hearing protection signs and the OSHA noise rule in the area where hearing protection is required?
- Is the OSHA Safety & Health Protection on the Job notice posted where employees can see it?

## Fire Safety

- Do you have a written Emergency Action Plan and Fire Prevention Plan? Is it reviewed at least annually to ensure that it is up-to-date? (If you have less than 10 employees, a written plan is not required and you can verbally communicate the procedures to your employees.)
- If you have more than 10 employees, have you provide basic training on procedures in the Emergency Action Plan and Fire Prevention Plan?
- Do you post emergency phone numbers around the shop or near telephones?
- Do you have a method of alerting employees in an emergency? Can you use a phone intercom or fire alarm system?
- Do you always use approved (USDOT, UL, NFPA, etc.) containers for the storage of flammable and combustible liquids? Are they labeled with HazCom information.
- Do you ensure that flammable/combustible liquids are not stored near electrical panels, press controls, outlets, light switches, bench grinders, etc.?

- Are parts washers installed with proper wiring and away from electrical panels? Are washer covers closed when not in use? Are fusible links required by the supplier?
- Are containers that receive flammable liquids grounded when dispensing?
- Do you perform immediate spill cleanup and general housekeeping for flammable/combustible liquids?
- Do you keep all containers closed when not in use?
- If you store soiled shop towels in small safety cans near the press, do you empty them daily? Are soiled shop towels stored in labeled 55 gallon steel drums until pickup?
- Do you keep only enough flammable or combustible liquids in your work area to do the job?
- Do you store flammable and combustible liquids in fire safety cabinets?
- Do you store more than the liquid quantities outside a fire safety cabinet, chemical storage room or designated fire area?
- Do you isolate flammable and combustible materials away from welding and other hot work?
- Do you provide adequate ventilation for work and storage areas?
- Do you provide employees with awareness training on the proper handling and storage of flammable and combustible liquids?
- Do you promote employee suggestions on better housekeeping, improved handling, and using smaller quantities of flammable/combustible liquids?
- Do you have a notification procedure for reporting spills and leaks for quick cleanup?
- Do your employees understand their responsibilities when a fire is discovered and the fire alarm sounds?

## Community Right to Know

- Do you exceed the Threshold Planning Quantities (TPQs) for listed hazardous chemicals? If so, have you notified the Indiana Emergency response Commission (IERC) and Local Emergency Planning Committee (LEPC)? See page 72 for specific TPQs.

- Do you file a Tier Two Report by March 1 each year. Do you mail it to the IERC and the LEPC? Do you keep copies of the report for at least five years.
- Do you use over 10,000 lbs or process over 25,000 lbs of any EPA listed chemicals? If so, do you submit the Form R annual report by July 1?
- If you file the Tier Two Report or Form R do you also submit the HC-500 form and annual fee in February each year?

## Spill Reporting

- Do your employees know that all spills outside the building should be reported to a shop manager or owner?
- Do shop managers know that a reportable spill must be reported to IDEM, and possibly the NRC, within two hours of discovery?
- Do you keep a copy of the tables of hazardous substances and their reportable quantities for reference?
- Do shop managers also know that under certain circumstances, the USDOT and IOSHA must also be notified?

## **Attachments**

**VOC Emission Worksheet**

**Hazardous Air Pollutants**

**Characteristic Hazardous Wastes**

**Example Waste Profile Sheets**

**Fountain Solution**

**Waste Ink**

**Waste Fixer**

**Waste Solvent**

**Example Manifest**

**Hazardous Waste Storage Area Sign**

**Emergency Notification List**

**Contacts/Hotlinks**

**Local Air Pollution Control Agencies**

**Local Pretreatment Programs**

## VOC Emissions Worksheet Example for Small Printers

Magenta Printing prints community newspapers for several publishers on a contract basis. They have a single offset nonheatset lithographic web press. To print, they used:

9,922 lbs of black ink

950 lbs of color ink

55 gallons of press cleaning solvent

25 gallons of fountain solution concentrate

Magenta obtained the VOC content for each product from the MSDS or directly from the supplier. The VOC content was determined using EPA's Method 24.

<u>Product</u>	<u>VOC Content</u>
Black Ink	5% (0.43 lbs/gal)
Color Ink	8% (0.76 lbs/gal) <sup>1</sup>
Press Cleaner	100% (6.9 lbs/gal)
Fountain Solution	0.5% (0.04 lbs/gal)

<sup>1</sup> Highest VOC content of all color inks used so that calculation can be simplified using total color ink used.

The press has 12 cylinders with a maximum speed of 30,000 papers/hour (pph). The maximum impression area is 22 x 24 inches. Calculate millions of square inches per year (MMin<sup>2</sup>/yr) throughput. (Again, this is a simplified case. The throughput must be determined for each press in your shop.)

$$\frac{\text{Max Press Speed (pph)} \times \text{\# of Cylinders} \times \text{Length (in)} \times \text{Width (in)} \times 8,760 \text{ (hr/yr)}}{1,000,000}$$

$$\frac{30,000 \text{ pph} \times 12 \times 24 \text{ in} \times 22 \text{ in} \times 8,760 \text{ hr/yr}}{1,000,000} = 1,665,100 \text{ MMin}^2/\text{yr}$$

Calculate VOC emissions from the black and color inks.

$$\frac{\text{lbs. ink/MMin}^2/\text{yr} \times \text{Weight \% VOC} \times 0.05 \times \text{Throughput (MMin}^2/\text{yr)}}{2,000 \text{ lbs/ton}} = \text{tons VOC/yr}$$

BLACK INK

$$\frac{0.8 \text{ lbs. ink/MMin}^2 \times 0.05 \times 0.05 \times 1,665,100 \text{ MMin}^2/\text{yr}}{2,000 \text{ lbs/ton}} = 1.66 \text{ tons VOC/yr}$$

TOTAL COLOR INKS

$$\frac{0.3 \text{ lbs. ink/MMin}^2 \times 0.08 \times 0.05 \times 1,665,100 \text{ MMin}^2/\text{yr}}{2,000 \text{ lbs/ton}} = 0.99 \text{ tons VOC/yr}$$

Calculate actual VOC emissions from press cleaning solutions.

$$\frac{\text{Solution gals} \times \text{lbs VOC/gal}}{2,000 \text{ lbs/ton}} = \text{tons VOC/yr}$$

$$\frac{55 \text{ gals} \times 6.9 \text{ lbs VOC/gal}}{2,000 \text{ lbs/ton}} = 0.19 \text{ tons VOC/yr}$$

Calculate actual VOC emissions from the fountain solution.

$$\frac{\text{Solution gals} \times \text{lbs VOC/gal}}{2,000 \text{ lbs/ton}} = \text{tons VOC/yr}$$

$$\frac{25 \text{ gals} \times 0.04 \text{ lbs VOC/gal}}{2,000 \text{ lbs/ton}} = < 0.01 \text{ tons VOC/yr}$$

Calculate VOC Potential Emissions.

Hours of production (include makeready, pressruns & blanket washing) during the past 12 months - 2,080 hr. Percent of operating capacity - 60%

$$\frac{(0.19 + 0.01) \text{ tons VOC/yr} \times 8,760 \text{ hr/yr}}{(2,080 \text{ prod. hr} \times 60\% \text{ capacity} \div 100)} = 1.4 \text{ tons VOC/yr}$$

Calculate Potential Emissions from all sources.

$$\text{Black + Color Ink (tons VOC/yr)} + \text{Press Solutions (tons/VOC/yr)} = \text{tons VOC/yr}$$

$$(1.66 + 0.99) \text{ tons VOC/yr} + (0.19 + 0.01) \text{ tons/VOC/yr} = 2.85 \text{ tons VOC/yr}$$

**Table of Hazardous Air Pollutants  
(Typical HAPs used by printers are highlighted in bold.)**

CAS No.	Chemical	CAS No.	Chemical
75070	Acetaldehyde	111444	Dichloroethyl ether
60355	Acetamide	542758	1,3-Dichloropropene
75058	Acetonitrile	62737	Dichlorvos
98862	Acetophenone	<b>111422</b>	<b>Diethanolamine</b>
53963	Acetylaminofluorene	121697	N,N Dimethylaniline
107028	Acrolein	64675	Diethyl sulfate
79061	Acrylamide	119904	3,3'-Dimethoxybenzidine
79107	Acrylic acid	60117	Dimethylaminoazobenzene
107131	Acrylonitrile	119937	3,3'-Dimethyl benzidine
107051	Allyl chloride (3-chloropropene)	79447	Dimethyl carbamoyl chloride
92671	4-Aminobiphenyl	68122	N,N-Dimethylformamide
62533	Aniline	57147	1,1-Dimethylhydrazine
90040	o-Anisidine	131113	Dimethyl phthalate
1332214	Asbestos	77781	Dimethyl sulfate
71432	Benzene	534521	4,6-Dinitro-o-cresol and salts
92875	Benzidine	51285	2,4-Dinitrophenol
98077	Benzotrithloride	121142	2,4-Dinitrotoluene
100447	Benzyl chloride	123911	1,4-Dioxane
92524	Biphenyl	122667	1,2-Diphenylhydrazine
117817	Bis(2-ethylhexyl) phthalate (DEHP)	106898	Epichlorohydrin
542881	Bis(chloromethyl)ether	106887	1,2-Epoxybutane
75252	Bromoform	140885	Ethyl acrylate
106990	1,3-Butadiene	<b>100414</b>	<b>Ethylbenzene</b>
156627	Calcium cyanamide	51796	Ethyl carbamate (urethane)
133062	Captan	75003	Ethyl chloride
63252	Carbayl	106934	Ethylene dibromide
75150	Carbon disulfide	107062	Ethylene dichloride (1,2-dichloroethane)
56235	Carbon tetrachloride	<b>107211</b>	<b>Ethylene glycol</b>
463581	Carbonyl sulfide	151564	Ethylene imine (aziridine)
120809	Catechol	75218	Ethylene oxide
133904	Chloramben	96457	Ethylenethiourea
57749	Chlordane	75343	Ethylidene dichloride (1,1-dichloroethane)
7782505	Chlorine	<b>50000</b>	<b>Formaldehyde</b>
79118	Chloroacetic acid	76448	Heptachlor
532274	2-Chloroacetophenone	118741	Hexachlorobenzene
108907	Chlorobenzene	87683	Hexachlorobutadiene
510156	Chlorobenzilate	77474	Hexachlorocyclopentadiene
67663	Chloroform	67721	Hexachloroethane
107302	Chloromethyl methyl ether	822060	Hexamethylene-1,6-diisocyanate
126998	Chloroprene	680319	Hexamethylphosphoramide
1319773	Cresols	<b>110543</b>	<b>n-Hexane</b>
95487	o-Cresol	302012	Hydrazine
108394	m-Cresol	<b>7647010</b>	<b>Hydrochloric acid</b>
106445	p-Cresol	7664393	Hydrofluoric acid
<b>98828</b>	<b>Cumene</b>	<b>123319</b>	<b>Hydroquinone</b>
94757	2,4-D, salts and esters	<b>78591</b>	<b>Isophorone</b>
3547044	DDE	58899	Lindane
334883	Diazomethane	108316	Maleic anhydride
132649	Dibenzofurans	<b>67561</b>	<b>Methanol</b>
96128	1,2-Dibromo-3-chloropropane (DBCP)	72435	Methoxychlor
<b>84742</b>	<b>Di-n-butyl phthalate</b>	74839	Methyl bromide (bromomethane)
106467	1,4-Dichlorobenzene (p)	74873	Methyl chloride (chloromethane)
91941	3,3'-Dichlorobenzidine	<b>71556</b>	<b>Methyl chloroform (1,1,1-trichloroethane)</b>



**Table 1 Characteristic Hazardous Wastes**

(Typical printer wastes by EPA Waste Code are in bold.)

- D001** Ignitable: Has a flash point of 140°F or less.
- D002** Corrosive: Liquids that easily corrode materials or human tissue and have a pH less or equal to 2 or greater than or equal to 12.5.
- D003 Reactive: Potentially explosive or produces toxic gases when mixed with water, air or other incompatible materials.
- D004 - D043** Toxic by the laboratory test, Toxicity Characteristic Leaching Procedure (TCLP). Refer below.

Compound	Waste Code	Regulatory Level (ppm)	Compound	Waste Code	Regulatory Level (ppm)
Arsenic	D004	5.0	Hexachlorobenzene	D032	0.13
<b>Barium</b>	<b>D005</b>	<b>100.0</b>	Hexachloro-1,3-butadiene	D033	0.5
Benzene	D018	0.5	Hexachloroethane	D034	3.0
Cadmium	D006	1.0	Lead	D008	5.0
Carbon Tetrachloride	D019	0.5	Lindane	D013	0.4
Chlordane	D020	0.03	Mercury	D009	0.2
Chlorobenzene	D021	100.0	Methoxychlor	D014	10.0
Chloroform	D022	6.0	<b>Methyl ethyl ketone</b>	<b>D035</b>	<b>200.0</b>
Chromium	D007	5.0	Nitrobenzene	D036	2.0
o-Cresol	D023	200.0	Pentachlorophenol	D037	100.0
m-Cresol	D024	200.0	Pyridine	D038	5.0
p-Cresol	D025	200.0	Selenium	D010	1.0
2,4-D	D016	10.0	<b>Silver</b>	<b>D011</b>	<b>5.0</b>
1,4-Dichlorobenzene	D027	7.5	<b>Tetrachloroethylene</b>	<b>D039</b>	<b>0.7</b>
1,2-Dichloroethane	D028	0.5	Toxaphene	D015	0.5
1,1-Dichloroethylene	D029	0.7	<b>Trichloroethylene</b>	<b>D040</b>	<b>0.5</b>
2,4-Dinitrotoluene	D030	0.13	2,4,5-Trichlorophenol	D041	400.0
Endrin	D012	0.02	2,4,6-Trichlorophenol	D042	2.0
Heptachlor	D031	0.008	Vinyl Chloride	D043	0.2

**Table 2 F-Listed Solvent Hazardous Wastes**

(Typical printer solvents and EPA Waste Codes are in bold.)

- F001 Halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons.
- F002 Halogenated solvents: **tetrachloroethylene**, **trichloroethylene**, **methylene chloride**, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,1,2-trifluoroethane, orthodichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane.
- F003 Ignitable nontoxic solvents: **xylene**, **acetone**, ethyl acetate, **ethyl benzene**, ethyl ether, methyl isobutyl ketone (MIBK), n-butyl alcohol, cyclohexanone, and **methanol**.
- F004 Toxic non-halogenated solvents: cresols, cresylic acid, and nitrobenzene.
- F005 Ignitable toxic solvents: **toluene**, **methyl ethyl ketone (MEK)**, carbon disulfide, isobutanol, **benzene**, pyridine, 2-ethoxyethanol, and 2-nitropropane.

**Table 3 U-Listed Wastes That May be Generated by Printers**

Name/Description	Waste Code	Name/Description	Waste Code
Acetone	U002	Methyl chloroform	U226
Benzene	U019	Methylene chloride	U080
Carbon tetrachloride	U211	Methyl ethyl ketone (MEK)	U159
Chromium	D007	Methyl isobutyl ketone	U161
Cumene	U055	Tetrachloroethylene	U210
Cyclohexane	U056	(perchloroethylene)	
Dibutyl phthalate	U069	Toluene	U220
Ethyl acetate	U112	Toluene diisocyanate	U223
Ethanol, 2-ethoxy	U359	Trichloroethylene	U228
Ethylene glycol monoethyl ether	U359	Vinyl chloride	U043
Formaldehyde	U122	Xylene	U239
Methanol	U154		

### Example Waste Profile Sheet for Waste Fountain Solution

**General Information**

Department Press Waste Coordinator John Smith

Waste Name Waste Isopropyl Alcohol

Process Generating the Waste Waste Fountain Solution

Waste Generation Rate (Gallons or pounds per month) 1/2 drum/month

Current Disposal Procedure Disposal Offsite

One-Time Disposal ? Yes  No

**Waste Classification**

Nonhazardous

Hazardous  If so, list the EPA Waste Codes. D001

**Waste Composition**

Tests of Representative Sample Yes  No  (attach test results)

Process Knowledge Yes  No  (attach supporting documentation, e.g. MSDSs)

	<u>Waste Composition</u>	<u>Percent</u>
1.	<u>Water</u>	<u>85</u>
2.	<u>Isopropyl Alcohol</u>	<u>15</u>
3.	<u></u>	<u></u>
4.	<u></u>	<u></u>
5.	<u></u>	<u></u>
6.	<u></u>	<u></u>

General Parameters Flash Point N/A °F pH 6.7

Physical State at 70 °F Solid  Liquid  Semi-Solid  Gas

Waste Packaging Type & Size (e.g. 55 gal drum) 55 gal plastic drum

Waste Coordinator Signature Karl Black Date 10/1/900

### Example Waste Profile Sheet for Waste Ink

**General Information**

Department Press Waste Coordinator John Smith

Waste Name Waste Combustible Liquid, NOS

Process Generating the Waste Waste Printing Ink Residues

Waste Generation Rate (Gallons or pounds per month) 1 drum/month

Current Disposal Procedure Disposal Offsite

One-Time Disposal ? Yes  No

**Waste Classification**

Nonhazardous

Hazardous  If so, list the EPA Waste Codes. \_\_\_\_\_

**Waste Composition**

Tests of Representative Sample Yes  No  (attach test results)

Process Knowledge Yes  No  (attach supporting documentation, e.g. MSDSs)

	<u>Waste Composition</u>	<u>Percent</u>
1.	<u>Petroleum Naphtha Solvent Blend</u>	<u>85</u>
2.	<u>Carbon Black</u>	<u>15</u>
3.	<u>_____</u>	<u>_____</u>
4.	<u>_____</u>	<u>_____</u>
5.	<u>_____</u>	<u>_____</u>
6.	<u>_____</u>	<u>_____</u>

General Parameters Flash Point N/A °F pH N/A

Physical State at 70 °F Solid  Liquid  Semi-Solid  Gas

Waste Packaging Type & Size (e.g. 55 gal drum) 55 gal steel drum

Waste Coordinator Signature Karl Black Date 10/1/00

### Example Waste Profile Sheet for Waste Solvent

**General Information**

Department Prepress Waste Coordinator Jenny Jones

Waste Name Hazardous Waste Liquid

Process Generating the Waste Waste Fixer

Waste Generation Rate (Gallons or pounds per month) 1 drum/month

Current Disposal Procedure Disposal Offsite

One-Time Disposal ? Yes  No

**Waste Classification**

Nonhazardous

Hazardous  If so, list the EPA Waste Codes. D011

**Waste Composition**

Tests of Representative Sample Yes  No  (attach test results)

Process Knowledge Yes  No  (attach supporting documentation, e.g. MSDSs)

	<u>Waste Composition</u>	<u>Percent</u>
1.	<u>Water</u>	<u>85</u>
2.	<u>Acetic Acid</u>	<u>10</u>
3.	<u>Sodium Sulfite</u>	<u>5</u>
4.	<u></u>	<u></u>
5.	<u></u>	<u></u>
6.	<u></u>	<u></u>

General Parameters Flash Point N/A °F pH 6.7

Physical State at 70 °F Solid  Liquid  Semi-Solid  Gas

Waste Packaging Type & Size (e.g. 55 gal drum) 55 gal plastic drum

Waste Coordinator Signature Karl Black Date 10/1/00

### Example Waste Profile Sheet for Waste Fixer

**General Information**

Department Press Waste Coordinator John Smith

Waste Name Waste Combustible Liquid

Process Generating the Waste Waste Press Cleaning Solvents

Waste Generation Rate (Gallons or pounds per month) 1/2 drum/month

Current Disposal Procedure Disposal Offsite

One-Time Disposal ? Yes  No

**Waste Classification**

Nonhazardous

Hazardous  If so, list the EPA Waste Codes. D001

**Waste Composition**

Tests of Representative Sample Yes  No  (attach test results)

Process Knowledge Yes  No  (attach supporting documentation, e.g. MSDSs)

	<u>Waste Composition</u>	<u>Percent</u>
1.	<u>Petroleum Naphtha Solvent</u>	<u>85</u>
2.	<u>Butyl Cellusolve</u>	<u>15</u>
3.	<u>_____</u>	<u>_____</u>
4.	<u>_____</u>	<u>_____</u>
5.	<u>_____</u>	<u>_____</u>
6.	<u>_____</u>	<u>_____</u>

General Parameters Flash Point N/A °F pH N/A

Physical State at 70 °F Solid  Liquid  Semi-Solid  Gas

Waste Packaging Type & Size (e.g. 55 gal drum) 55 gal steel drum

Waste Coordinator Signature Karl Black Date 10/1/00

PLEASE PRINT OR TYPE (Form designed to use on elite (12-pitch typewriter)). Form approved. OMB No. 2050-0039. Expires 9-30-98.

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA No. I L D 8 8 8 8 8 8 8 8 8 8		Manifest Document No. 8 8 8 8		2.. Page 1 of		Information in the shaded areas is not required by Federal Law, but items D, F, H, I and K are required by State law.															
		3. Generator's Name and Mailing Address Magenta Printing Company 1234 Cyan Drive Indianapolis, IN 55555 ATTN: Karl Black						A. State Manifest Document Number INA 1999999															
4. Generator's Phone (3 1 7) 5 5 5 - 1 0 0 0						B. State Generator's ID																	
5. Transporter 1 Company Name Green Transporting Company				6. US EPA ID Number I N D 9 9 9 9 9 9 9 9 9 9		C. State Transporter's ID			D. Transporter's Phone 800-555-9999														
7. Transporter 2 Company Name				8. US EPA ID Number		E. Transporter's ID			F. Transporter's Phone														
9. Designated Facility Name and Site Address Environmentally Friendly Disposal, Inc. 505 Disposal Drive Terre Haute, IN 66666						10. US EPA ID Number I N D 8 8 8 8 8 8 8 8 8 8		G. State Facility's ID			H. Facility's Phone 800-555-8888												
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol.		I. Waste No.											
						a. RQ, Waste Isopropanol, Class 3 UN1219 PG II (D001) (ERG#129)						002 DM		7 5 0		P D001							
						b. Waste Combustible Liquid, Class 3 NA 1993 PG III (ERG#128) (Not USEPA Hazardous Waste)						004 DM		1 8 7 0		P None							
						c. RQ, Hazardous Waste Liquid, NOS, Class 9 UN 3082 PG III (D011) (ERG#171)						001 DM		4 7 0		P D011							
						d. Waste Combustible Liquid, Class 3 NA 1993 PG III (D001) (ERG#128)						001 DM		3 8 0		P D001							
J. Additional Descriptions for Materials Listed Above a: Alcohol, b: Waste Ink, c: Spent Fixer, d: Spent Blanket Wash						K. Handling Codes for Wastes Listed Above																	
15. Special Handling Instructions and Additional Information Emergency Response 800-555-8888 (24 hrs). If undeliverable, return to generator.																							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.																							
Printed/Typed Name						Signature						Month		Date Day		Year							
17. Transporter 1 Acknowledgement of Receipt of Material						Printed/Typed Name						Signature						Month		Date Day		Year	
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name						Signature						Month		Date Day		Year	
19. Discrepancy Indication Space																							
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted item 19.																							
Printed/Typed Name						Signature						Month		Date Day		Year							

National Response Center at 800/424-8802 or 202/426-2675.

EPA Form S700-22  
Previous editions are obsolete

**HAZARDOUS  
WASTE  
STORAGE  
AREA**

\*\*\* POST THIS NEAR ALL TELEPHONES \*\*\*

# Emergency Notification List

## Emergency Phone Numbers

Fire Department \_\_\_\_\_  
 Police Department \_\_\_\_\_  
 Ambulance \_\_\_\_\_  
 Emergency Coordinator (*Hazardous Waste*) \_\_\_\_\_  
 Phone Number / Beeper Number \_\_\_\_\_  
 County Sheriff \_\_\_\_\_  
 Indiana State Police \_\_\_\_\_  
 FBI \_\_\_\_\_  
 Poison Information \_\_\_\_\_  
 U.S. Marshal \_\_\_\_\_  
 Civil Defense \_\_\_\_\_  
 Water Department \_\_\_\_\_  
 Weather Department \_\_\_\_\_  
 Locations of Fire Extinguishers \_\_\_\_\_  
 Location of Fire Alarm (*if you have one*) \_\_\_\_\_

## Spill Emergency Notification

IDEM Emergency Response Branch: (888) 233-7745  
 24 hrs. / day, 7 days / week TOLL FREE

National Response Center: (800) 424-8802  
 24 hrs. / day, 7 days / week TOLL FREE

US EPA ID# \_\_\_\_\_

County Health Department Phone # \_\_\_\_\_

Local Public Works / Sewer Department Phone # \_\_\_\_\_

Recovery Contractor Name: \_\_\_\_\_

Phone # \_\_\_\_\_

Location of Spill Control Equipment \_\_\_\_\_

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



**T**here is a wealth of compliance and P2 information available to the printer. Here is a list of contacts and websites that may help printers seeking information and offer an opportunity to network online with other printers to find environmental solutions.

**Printing Industry of Illinois•Indiana Association**

70 East Lake Street  
Chicago, IL 60601  
(312) 580-3041

*Home page* [www.pii.org](http://www.pii.org)

**Indiana Department of Environmental Management**

Address for all offices:  
IDEM (office name from below)  
100 N. Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015

*Home page* [www.in.gov/idem](http://www.in.gov/idem)

**Compliance & Technical Assistance Program (CTAP)**

CTAP operates under a confidentiality mandate; other IDEM offices do not operate under this mandate.

150 West Street, Suite 703  
Indianapolis, IN 46204-2811  
(317) 232-8172 or (800) 988-7901 (Indiana only)

*Home page* [www.in.gov/idem/ctap](http://www.in.gov/idem/ctap)

**Office of Land Quality (OLQ)**

(317) 233-3656 or (800) 451-6027, press 0 and ask for ext. 3-3656  
Hazardous Waste Generator Status: Marilyn Hansen, ext.2-7956  
Manifest Information: Michelle Weddle, ext. 3-4624

**Office of Air Quality (OAQ)**

(317) 233-0178 or (800) 451-6027, press 0 and ask for ext. 3-0178

**Office of Water Quality (OWQ)**

(317) 232-8476 or (800) 451-6027, press 0 and ask for ext. 2-8476

**Other Regulatory Agencies**

**Office of the State Fire Marshal including Department of Fire & Building Services**

Indiana Government Center South  
402 W. Washington St., Room E241  
Indianapolis, IN 46204-2739  
(317) 232-2226

*Home page* [www.in.gov/sema/osfm](http://www.in.gov/sema/osfm)

**Office of the State Building Commissioner**

402 W. Washington Street W246  
 Indianapolis, IN 46204  
 (317) 232-1404  
Home page [www.in.gov/sema/osbc.html](http://www.in.gov/sema/osbc.html)

**Indiana Department of Labor**

Bureau of Safety Education and Training  
 402 West Washington Street  
 Indianapolis, IN 46204  
 (317) 232-2688  
 For questions about OSHA requirements, ask for Industrial Hygiene Department.  
Home page [www.in.gov/dol/HTML/buset.html](http://www.in.gov/dol/HTML/buset.html)

IOSHA (industrial hygiene)  
Home page [www.in.gov/dol/ihygn](http://www.in.gov/dol/ihygn)

IOSHA (industrial safety)  
Home page [www.in.gov/dol/isafe](http://www.in.gov/dol/isafe)

**Indiana Department of Revenue**

100 N. Senate Avenue  
 Indianapolis, IN 46204  
 (317) 232-2240  
Home page [www.in.gov/dor](http://www.in.gov/dor)

**US Environmental Protection Agency (EPA)**

Home page [www.epa.gov](http://www.epa.gov)

Region 5 Office	(800) 621-8431
National Response Center (spill response)	(800) 424-8802
Small Business Ombudsman	(800) 368-5098
<u>Home page</u> <a href="http://www.epa.gov/sbo">www.epa.gov/sbo</a>	
Center for Environmental Research information	(513) 569-7562
Indoor Air Quality Information Clearinghouse	(800) 438-4318
EPA Energy Star	(800) 782-7937
Safe Drinking Water	(800) 426-4791
Wastewater/Small Flows Clearinghouse (West Virginia University)	(800) 624-8301
Pollution Prevention Information Clearinghouse	(202) 260-7788
National Solid and Hazardous Waste Ombudsman	(202) 260-9361
Solid and Hazardous Waste (RCRA)	(800) 424-9346
Right to Know Title III (EPCRA)	(800) 535-0202
Toxic Substances Control Act and Asbestos Information	(202) 554-1404
EPA Waste Wi\$e/Waste Reduction	(800) 372-9473
Office of Environmental Justice	(800) 962-6215
Office of Pollution Prevention/Toxics/Small Business Liaison	(202) 260-2983
National Center for Environmental Research for Small Business	(800) 490-9194
Recycling Hotline	(800) 263-2687
Small Business Administration	(800) 827-5722

**USEPA website for Form R and instructions**

Home page [www.epa.gov/TRI](http://www.epa.gov/TRI)

**U.S. Occupational Safety & Health Administration (OSHA)**

*Home page* [www.osha.gov](http://www.osha.gov)

**Occupational Safety & Health Administration**

(OSHA) (Worker Safety Referral Service)

(800) 321-6742

**Other Printing Organizations**

**Graphic Arts Technical Foundation (GATF)**

*Home page* [www.gatf.lm.com](http://www.gatf.lm.com)

(412) 741-6860

**Printers National Environmental Assistance Center (PNEAC)**

(one stop online resource with links to numerous sites and listserver)

(888) USPNEAC

*Home page* [www.pneac.org](http://www.pneac.org)

**Printing Industries of America (PIA)**

*Home page* [www.printing.org](http://www.printing.org)

**CHEMTREC (Chemical Manufacturers Association) (Emergency Response)**

(800) 262-8200

**Environmental Conservation board of the Graphic  
Communications Industries**

(703) 648-3218

**Institute of Advanced Manufacturing Sciences**

(Center for Applied Environmental Technologies)

(513) 948-2000

**Green and Profitable Printing Solid and Hazardous Waste Education Center**

(608) 262-0385

**Small Business Environmental Home Page**

*Home page* [www.smallbiz-enviroweb.org](http://www.smallbiz-enviroweb.org)

**WAZZU P2 Environmental Resource Information Center**

(links to numerous sites and the P2 TECH archives)

*Home page* [www.wsu.edu:8080/~wazzup2/wazzu.htm](http://www.wsu.edu:8080/~wazzup2/wazzu.htm)

**Enviro\$en\$e (home page for P2 case studies & more)**

*Home page* [www.seattle.batelle.org/es-guide/print/print.htm](http://www.seattle.batelle.org/es-guide/print/print.htm)

**Listservers**

**Printiers' National Environmental Assistance Center (PNEAC)**

*Home page* [www.pneac.org](http://www.pneac.org)

*Listserv page* [www.pneac.org/listserv/home2.htm](http://www.pneac.org/listserv/home2.htm)

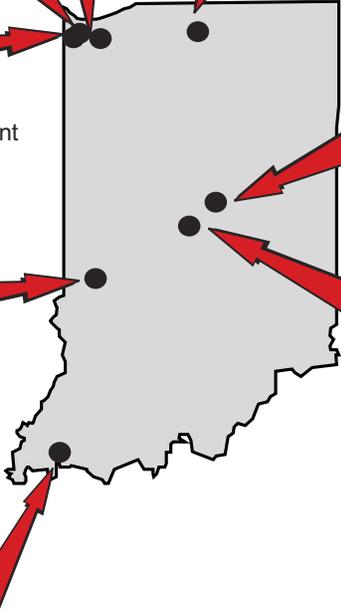
**PrinTech & PrintReg** (free online discussions and resources for printers)

**P2Tech** (free online discussions and resources for any industry)

Send email to this address for more information – [owner-p2tech@great-lakes.net](mailto:owner-p2tech@great-lakes.net)

# Local Air Pollution Control Agencies

Along with EPA and IDEM, there are agencies who work at the local level to ensure that the regulated community is in compliance with air pollution requirements. Each local air agency is structured differently to best serve its citizens. Local requirements may be more stringent than the federal or state requirements, so you should contact these agencies directly for more information.



Gary Department of Environmental Affairs  
Suite 1012  
504 N. Broadway  
Gary, IN 46402  
219-882-3007

St. Joseph County Health Department  
Room 914  
County/City Building  
South Bend, IN 46601-1870  
219-335-9775

East Chicago Department of Environmental Management  
4522 Indianapolis Blvd.  
East Chicago, IN 46312  
219-391-8297

Hammond Department of Environmental Management  
5925 Calumet Ave.  
Hammond, IN 46320  
219-853-6306  
website - <http://ci.hammond.in.us/environment>  
email - [hamenv@jorsm.com](mailto:hamenv@jorsm.com)

Vigo County Air Pollution Control  
103 South Third Street  
Terre Haute, IN 47807  
812-462-3433  
email - [vcapc@iquest.net](mailto:vcapc@iquest.net)

Anderson Office of Air Management (serving Madison County)  
120 East 8th Street  
Anderson, IN 46011  
765-648-6158  
website - <http://netdirect.net/oamamc>  
email - [oamamc@netdirect.net](mailto:oamamc@netdirect.net)

Environmental Resources Management Division  
Administration Building  
2700 South Belmont Ave.  
Indianapolis, IN 46221  
317-327-2237  
website - <http://indygov.org/ermd/air.htm>

Evansville EPA  
Room 250  
101 N.W. Martin L. King Jr. Blvd.  
Evansville, IN 47708  
812-435-6145  
email - [terry@evansville.net](mailto:terry@evansville.net)

# Municipalities with Approved Local Pretreatment Programs

(as of August 1, 2000)

<u>POTW</u>	<u>CONTACT</u>	<u>PHONE #</u>	<u>FAX #</u>
Anderson	Mr. Marlin Fisher	765/648-6569	765/642-2211
Auburn	Mr. David Lochner	219/925-1714	219/925-8243
Bloomington	Mr. John Langley	812/349-3656	812/331-5407
Bremen	Mr. Bill Reed	219/546-3829	219/546-5487
Columbus	Mr. Bob Lindemann	812/372-8861 X471	812/376-2475
Connersville	Ms. Maryellen Blanton	765/825-9411	765/825-5031
Crawfordsville	Mr. Larry Kadinger	765/364-5169	765/364-5177
East Chicago	Ms. Nickie Geros	219/391-8466	219/391-8254
Elkhart	Ms. Lynn Newvine	219/293-2572	219/293-7658
Evansville	Mr. Tim Berkmeier	812/426-2820	812/426-2833
Fort Wayne	Mr. Jim Cornell	219/427-1271	219/427-1174
Frankfort	Mr. Dennis Shirar	765/659-4741	765/659-4742
Gary	Ms. Lori Sloan	219/944-1211 X200	219/944-0723
Goshen	Mr. David Bates	219/534-5802	219/534-4350
Greensburg	Mr. Cathy Rich	812/663-2138	812/663-3258
Hammond	Mr. Jeffery Massey	219/853-6413	219/853-6321
Huntington	Mr. Shad Funk	219/358-2313	219/356-0344
Indianapolis	Mr. Timothy Heider	317/327-2247	317/327-2230
Jasper	Ms. Joyce Leinenbach	812/482-3277	812/482-3284
Jeffersonville	Ms. Carrie Black	812/285-6451	812/285-6454
Kendallville	Mr. Bill Forbes	219/347-1362	219/347-7037
Kokomo	Mr. Rodger Fain	765/457-5509	765/457-9781
Lafayette	Ms. Angela Andrews	765/476-4550	765/476-4549
LaPorte	Mr. Matthew Amor	219/362-2354	219/362-1018
Logansport	Mr. Paul Hartman	219/753-6231	219/753-9828
Madison	Mr. David Hawkins	812/265-8328	812/265-3349
Marion	Mr. Richard Kain	765/664-9056	765/668-8556
Michigan City	Mr. Michael Hoffman	219/874-7799	219/874-8053
Mishawaka	Mr. Don Demeter	219/258-1655	219/255-3557
Muncie	Mr. John Craddock	765/747-4896	765/747-4723
New Albany	Ms. Joanna Wood	812/948-5338	812/948-1596
New Castle	Mr. Chris Maines	765/521-6836	765/521-6839
North Vernon	Mr. Thomas Schwing	812/346-5493	812/346-7304
Plymouth	Mr. Dennis Hooker	219/936-2368	219/936-3017
Princeton	Mr. William Eubanks	812/385-3343	812/385-8743
Richmond	Mr. Steve Swoveland	765/983-7473	765/962-2669
Seymour	Mr. Simen Stearns	812/522-5351	812/523-6907
Shelbyville	Mr. William Barnes, II.	317/392-5131	317/392-5143
South bend	Mr. Ken Zmudzinski	219/277-8515	219/277-8980
Speedway	Mr. John Semenick	317/248-1446	317/248-1446
Terre Haute	Mr. Bill Cultice	812/232-6564	812/232-5217
Valparaiso	Mr. Richard Denny	219/464-4973	219/465-0275
Vincennes	Mr. Todd Chimel	812/886-5011	812/886-5045
Wabash	Mr. Bob Gray	219/563-2941	219/569-9406
Warsaw	Mr. David Van Dyke	219/372-9562	219/267-6885